MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE

13901 Crown Court Woodbridge, VA 22193

SUBJECT: Modification of VPDES Permit VA0076805

TO: Remington WWTP 2010 Modification File

FROM: Susan Mackert

DATE: July 13, 2010

REVISION DATE: September 9, 2010

On May 19, 2010, The Department of Environmental Quality – Northern Regional Office (DEQ-NRO) received a permit modification request from the Fauquier County Water and Sanitation Authority. The modification was requested by the permittee to address the termination of the Authority's pretreatment program and to revise permit language accordingly. This memorandum summarizes the changes to the permit and serves as the modification to the original Fact Sheet.

The following discussions are numbered as they appear in the original Fact Sheet. The information contained in this memorandum replaces or expands upon the information in the Fact Sheet.

20b. Other Permit Requirements – Pretreatment Program

Background Information and Rationale

The Pretreatment Program for Fauquier County Water and Sanitation Authority was originally approved on March 21, 2006. One Significant Industrial User (SIU) was identified and regulated through this program (Old Dominion Electric Cooperative – Marsh Run Generation Facility).

In correspondence dated May 6, 2010, the Fauquier County Water and Sanitation Authority proposed to delist the Old Dominion Electric Cooperative – Marsh Run Generation Facility as a SIU and to revoke the facility's SIU discharge permit. By letter dated May 19, 2010, DEQ had no objection to the delisting.

A review of industrial survey results submitted by the Fauquier County Water and Sanitation Authority on May 26, 2010, indicates no SIUs have been found to discharge to the collection system of the Remington WWTP. Based on this review and the delisting of the Old Dominion Electric Cooperative – Marsh Run Generation Facility, DEQ staff determined the Fauquier County Water and Sanitation Authority may terminate the pretreatment program for the Remington WWTP.

By letter dated June 21, 2010, the Fauquier County Water and Sanitation Authority was advised that although the pretreatment program may be terminated the Authority is still responsible for monitoring industrial user flow to the collection system. If the Fauquier County Water and Sanitation Authority determines that significant industrial users are present, implementation of a pretreatment program shall begin.

22. Changes to Permit from the Previously Issued Permit

b) Monitoring and Effluent Limitations

- Pretreatment program language was removed to reflect the termination of the Authority's program.
- In response to pretreatment language being removed from the permit, Toxics Monitoring Program requirements are now found within Part I.C rather than Part I.D.

- In response to pretreatment language being removed from the permit, Sludge Management and Reporting Requirements are now found within Part I.D rather than Part I.E.
- In response to pretreatment language being removed from the permit, Other Requirements and Special Conditions are now found within Part I.E rather than Part I.F.

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on 1) the proposed termination of the Fauquier County Water and Sanitation Authority's Pretreatment Program, and 2) the proposed modifications of permits from the Department of Environmental Quality that allow the release of treated wastewater into a water body in Fauquier County, Virginia.

PUBLIC COMMENT PERIOD: September 30, 2010 to 5:00 p.m. on October 29, 2010

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBERS: Fauquier County Water and Sanitation Authority, 7172 Kennedy Road, Warrenton, VA 20187, VA0020460, VA0031763, and VA0076805

NAME AND ADDRESS OF FACILITIES: Vint Hill Farms Station WWTP, 4266 Backe Drive, Warrenton, VA 20187
Marshall WWTP, 4319 Old Morganstown Road, Marshall, VA 20115
Remington WWTP, 12523 Lucky Hill Road, Remington, VA 22734

PRETREATMENT PROGRAM TERMINATION: The Pretreatment Program for Fauquier County Water and Sanitation Authority was originally approved on March 21, 2006. One Significant Industrial User (SIU) was identified and regulated through this program. The Fauquier County Water and Sanitation Authority has delisted the SIU and subsequently revoked the facility's SIU discharge permit in May 2010. The Fauquier County Water and Sanitation Authority has requested termination of the County's approved program.

PROJECT DESCRIPTION – PERMIT MODIFICATIONS: The Fauquier County Water and Sanitation Authority has applied for modifications of the permits for the public facilities listed above as the applicant proposes to terminate the County's pretreatment program. Termination of the pretreatment program does not effect already established effluent limitations and monitoring requirements for the facilities listed above.

The Fauquier County Water and Sanitation Authority has applied for a modification of the permit for the public Vint Hill Farms Station WWTP to remove pretreatment program requirements. The permit will continue to limit the following pollutants to amounts that protect water quality: pH, BOD_5, Total Suspended Solids, *E. coli*, Ammonia, Total Phosphorus, and Total Nitrogen. This facility is subject to the requirements of 9VAC25-820 and is registered for coverage under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

The Fauquier County Water and Sanitation Authority has applied for a modification of the permit for the public Marshall WWTP to remove pretreatment program requirements. The permit will continue to limit the following pollutants to amounts that protect water quality: flow, pH, cBOD, TSS, DO, TKN, and *E. coli*. This facility is subject to the requirements of 9VAC25-820 and is registered for coverage under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

The Fauquier County Water and Sanitation Authority has applied for a modification of the permit for the public Remington WWTP to remove pretreatment program requirements. The permit will continue to limit the following pollutants to amounts that protect water quality: pH, $CBOD_5$, Total Suspended Solids, Dissolved Oxygen, Total Kjeldahl Nitrogen, Total Recoverable Zinc. *E. coli,* and Chronic Toxicity. This facility is subject to the requirements of 9VAC25-820 and is registered for coverage under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

HOW TO COMMENT ON THE PRETREATMENT PROGRAM TERMINATION: DEQ accepts comments by e-mail, fax or postal mail. All comments must be in writing and be received by DEQ during the comment period. The public also may request a public meeting. Written comments should include the names, mailing addresses and telephone

numbers of the person commenting. To review pretreatment program documents, please contact Anna Westernik at anna.westernik@deq.virginia.gov; (703) 583-3837.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION ON THE PERMIT MODIFICATIONS: The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.
Name: Susan Mackert
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3853 E-mail: susan.mackert@deq.virginia.gov Fax: (703) 583-3821

Revised 2/2003

State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Remington WWTP
NPDES Permit Number:	VA0076805
Permit Writer Name:	Susan Mackert
Date:	July 14, 2010

Major [X] **Minor** [ ] **Industrial** [ ] **Municipal** [X]

I.A. Draft Permit Package Submittal Includes:	**Yes**	**No**	**N/A**
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis?	X		
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics	**Yes**	**No**	**N/A**
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet **or** permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet **or** permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?		X	
a. Has a TMDL been developed and approved by EPA for the impaired water?			X
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?			X
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?		X	

I.B. Permit/Facility Characteristics – cont.	**Yes**	**No**	**N/A**
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		**X**	
12. Are there any production-based, technology-based effluent limits in the permit?		**X**	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		**X**	
14. Are any WQBELs based on an interpretation of narrative criteria?		**X**	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		**X**	
16. Does the permit contain a compliance schedule for any limit or condition?		**X**	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		**X**	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?		**X**	
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		**X**	
20. Have previous permit, application, and fact sheet been examined?	**X**		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs

II.A. Permit Cover Page/Administration	**Yes**	**No**	**N/A**
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	**X**		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	**X**		

II.B. Effluent Limits – General Elements	**Yes**	**No**	**N/A**
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	**X**		
2. Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?	**X**		

II.C. Technology-Based Effluent Limits (POTWs)	**Yes**	**No**	**N/A**
1. Does the permit contain numeric limits for ALL of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	**X**		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	**X**		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			**X**
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	**X**		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	**X**		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		**X**	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter,			**X**

etc.) for the alternate limitations?			
II.D. Water Quality-Based Effluent Limits	**Yes**	**No**	**N/A**
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	**X**		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?			**X**
3. Does the fact sheet provide effluent characteristics for each outfall?	**X**		
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	**X**		
a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	**X**		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	**X**		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	**X**		
d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	**X**		
e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	**X**		
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	**X**		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	**X**		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	**X**		
8. Does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	**X**		

II.E. Monitoring and Reporting Requirements	**Yes**	**No**	**N/A**
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	**X**		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	**X**		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		**X**	
4. Does the permit require testing for Whole Effluent Toxicity?	**X**		

II.F. Special Conditions	**Yes**	**No**	**N/A**
1. Does the permit include appropriate biosolids use/disposal requirements?	**X**		
2. Does the permit include appropriate storm water program requirements?			**X**
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			**X**
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?			**X**
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		**X**	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		**X**	
a. Does the permit require implementation of the "Nine Minimum Controls"?		**X**	
b. Does the permit require development and implementation of a "Long Term Control Plan"?		**X**	

c. Does the permit require monitoring and reporting for CSO events?		**X**	
7. Does the permit include appropriate Pretreatment Program requirements?			**X**

II.G. Standard Conditions	**Yes**	**No**	**N/A**
1. Does the **permit** contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	**X**		

List of Standard Conditions – 40 CFR 122.41

Duty to comply	Property rights	Reporting Requirements
Duty to reapply	Duty to provide information	Planned change
Need to halt or reduce activity not a defense	Inspections and entry	Anticipated noncompliance
	Monitoring and records	Transfers
Duty to mitigate	Signatory requirement	Monitoring reports
Proper O & M	Bypass	Compliance schedules
Permit actions	Upset	24-Hour reporting
		Other non-compliance

2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	**X**		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	Susan Mackert
Title	Environmental Specialist II Senior
Signature	
Date	July 14, 2010

This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a **Major**, **Municipal** permit. The discharge results from the operation of a 2.0 MGD wastewater treatment plant with future expansion for 2.5 MGD. This permit action consists of updating the WQS and updating boilerplate language. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et seq.

1.	Facility Name and Mailing Address:	Remington WWTP 12523 Lucky Hill Road Remington, VA 22734	SIC Code :	4952 (WWTP)
	Facility Location:	12523 Lucky Hill Road Remington, VA 22734	County:	Fauquier
	Facility Contact Name:	Mr. Stephan M. Shelton – Chief Operator	Telephone Number:	(540) 439-2225
2.	Permit No.:	VA0076805	Expiration Date of previous permit:	May 30, 2007
	Other VPDES Permits associated with this facility:		VAN020053	
	Other Permits associated with this facility:		Waste - VAN988215372	
	E2/E3/E4 Status:	N/A		
3.	Owner Name:	Fauquier County Water and Sanitation Authority		
	Owner Contact/Title:	Mr. Wesley Basore – Director of Operations and Maintenance	Telephone Number:	(540) 349-2092
4.	Application Complete Date:	January 30, 2007		
	Permit Drafted By:	Susan Mackert	Date Drafted:	April 9, 2007
	Permit Drafted By:	Susan Mackert	Date Drafted:	December 7, 2007
	Draft Permit Reviewed By:	Alison Thompson	Date Reviewed:	April 11, 2007
	Draft Permit Reviewed By:	Alison Thompson	Date Reviewed:	December 27, 2007
	Public Comment Period :	Start Date: January 17, 2008	End Date:	February 15, 2008

5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination

Receiving Stream Name :	Rappahannock		
Drainage Area at Outfall:	632 sq.mi.	River Mile:	144.48
Stream Basin:	Rappahannock	Subbasin:	Rappahannock River
Section:	3	Stream Class:	III
Special Standards:	None	Waterbody ID:	VAN-E08R
7Q10 Low Flow: June - Nov	6.4 MGD	7Q10 High Flow: Dec - May	64 MGD
1Q10 Low Flow: June – Nov	5.6 MGD	1Q10 High Flow: Dec - May	52 MGD
Harmonic Mean Flow:	101 MGD	30Q5 Flow:	21 MGD
303(d) Listed:	No	30Q10 Flow:	12 MGD
TMDL Approved:	No	Date TMDL Approved:	N/A

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

✓	State Water Control Law	✓	EPA Guidelines
✓	Clean Water Act	✓	Water Quality Standards
✓	VPDES Permit Regulation		Other
✓	EPA NPDES Regulation		

7. Licensed Operator Requirements: Class II

8. Reliability Class: Class I

9. Permit Characterization:

	Private		Effluent Limited		Possible Interstate Effect
	Federal	✓	Water Quality Limited		Compliance Schedule Required
	State	✓	Toxics Monitoring Program Required		Interim Limits in Permit
✓	POTW	✓	Pretreatment Program Required		Interim Limits in Other Document
	TMDL				

10. Wastewater Sources and Treatment Description:

The Remington WWTP is a 2.0 MGD facility with a tiered permit of 2.0 MGD and 2.5 MGD. The plant receives domestic wastewater from the Town of Remington, the Bealeton area and the Opal Area. The plant is currently treating wastewater under the 2.0 MGD flow tier.

The Remington WWTP process consists of screening, grit removal, influent flow measurement, activated sludge treatment or aeration (Schreiber Units), secondary clarification and scum removal, effluent flow measurement, UV disinfection and post aeration prior to discharge.

Influent entering the WWTP passes through one mechanically cleaned bar screen. Debris is removed roughly six times per day and is ultimately disposed of in the Fauquier County Landfill. Screened wastewater then flows through one cyclone degritter. Grit is removed approximately four times per day and is also disposed of in the Fauquier County Landfill.

The screened and degritted wastewater then flows to the activated sludge process using one of two Schreiber Units. Five aeration blowers are available with one to two blowers being used per unit to provide air to maintain D.O. levels. The mixed liquor effluent then flows to two secondary clarifiers with one typically in use. A scum collection system pumps scum removed from the surface of the clarifiers to the headworks for removal.

Final effluent flow is continuously measured at the effluent parshall flume via an ultrasonic flow meter. The final effluent can be aerated in the effluent channel via dedicated post aeration blowers. Ultraviolet (UV) units are provided for disinfection.

Additionally, all facility drains transport drainage to the plant drain pump station. This includes all process unit operation systems. All storm water drainage ditches located around the plant, especially those adjacent to the solids holding tank and sludge handling building are contained via an 8-inch pipe and diverted to the gravity sludge thickeners. All potential drainage, to include storm water runoff, is contained and diverted to the headworks via the plant drain pump station.

A facility schematic/diagram was provided as part of the application package and is available in the permit reissuance file.

TABLE 1 – Outfall Description				
Outfall Number	**Discharge Sources**	**Treatment**	**Design Flow**	**Outfall Latitude and Longitude**
001	Domestic Wastewater Treatment Plant	See Item 10 above.	2.0 MGD (tiered permit of 2.0 MGD and 2.5 MGD)	38° 31′ 33″ N 77° 48′ 42″ W
See Attachment 2 for (Remington, DEQ #196D) topographic map.				

11. Sludge Treatment and Disposal Methods:

Waste activated sludge (WAS) is wasted to one aerobic digester. Digested sludge flows by gravity to two gravity sludge thickeners, one of which is typically in use. Gravity thickened sludge is fed to one dewatering centrifuge for dewatering with polymer. Dewatered, aerobically digested sludge cake is placed on a covered, concrete pad for temporary storage (approximately two weeks).

Recyc Systems, Incorporated serves as the contractor for Remington WWTP. Recyc Systems does not have dedicated land application sites for the biosolids generated at the Remington WWTP. Recyc Systems holds 29 Virginia Biosolids Use Permits from the Virginia Department of Health with over 700 multiple landowner sites. Biosolids from the Remington WWTP are an approved biosolids source under all of the 29 VDH-BUR permits listed below.

VDHBUR 3	VDHBUR 8	VDHBUR 69	VDHBUR 100	VDHBUR 118	VDHBUR 132
VDHBUR 4	VDHBUR 9	VDHBUR 86	VDHBUR 103	VDHBUR 119	VDHBUR 135
VDHBUR 5	VDHBUR 16	VDHBUR 89	VDHBUR 104	VDHBUR 120	VDHBUR 137
VDHBUR 6	VDHBUR 22	VDHBUR 95	VDHBUR 115	VDHBUR 129	VDHBUR 140
VDHBUR 7	VDHBUR 61	VDHBUR 97	VDHBUR 116	VDHBUR 130	

Please see the VDHBUR permits submitted as part of the application process for additional information.

12. Discharges, Intakes, Monitoring Stations, Other Items within Vicinity of Discharge

TABLE 2	
VAG750125	Fauquier Feed Supply
VAG110110	Crider and Shockey Incorporated - Bealton
VAR050796	Ramoneda Brothers
VAR050905	Lane Enterprises Incorporated
VAR050920	Superior Paving Corporation – Bealton Plant
VAR050984	Culpeper County Airport
VAR051665	US Greenfiber, LLC
VAG840100	Luck Stone – Bealton Plant
VAG406145	William A. Bailey Residence – 600gpd
VAG406084	Bradley O. Coles Residence – 800 gpd
VAG406023	Dixie M. Compton Residence – 1000 gpd
VAG406365	Culpeper Farmers Cooperative Incorporated – 800 gpd

VAG406311	Eastern Clearing Incorporated – 300 gpd
VAG406358	Garret Street Property – 800 gpd
VAG406312	John C. Kandl Residence – 300 gpd
VAG406232	Kastle Greens Golf Course – 1000 gpd
VAG406119	James H. Weeks IV Residence – 600 gpd
VA0051675	Colonial Pipeline - Remington
VA0064726	Mary Walter Elementary School
VA0090603	Culpeper County – Elkwood WWTP
VA0068586	Culpeper County Industrial Airpark STP
VA0091022	Dominion – Remington CT Station
VA0067750	TP Developed Parcel Limited Liability Corporation
VA0091448	ODEC – Marsh Run
3-BOS000.72	Ambient monitoring station located at Rt. 653 (Morganburg Road)
3-CRA000.82	Ambient monitoring station located at Rt. 654
3-MAH000.19	Ambient monitoring station located at Rt. 651 (Summerduck Road)
3-MAH004.18	Ambient monitoring station located at Rt. 668 (Savannah Branch Road)
3MAH-F12-SOS	Citizen's monitoring station
3MAH-F12-URWP	Citizen's monitoring station
3MAH-JMS	Citizen's monitoring station
3-RPP142.36	Ambient monitoring station located at Rt. 620
3-RPP147.10	Ambient and biological monitoring station located at Rt. 15/Rt. 29 Business

13. Material Storage:

TABLE 3 - Material Storage		
Materials Description	Volume Stored	Spill/Stormwater Prevention Measures
30 weight oil	55 gallons	Located within oil shed
220 hydraulic oil	55 gallons	Located within oil shed
767 Percol Polymer	4 drums	Located within solids building

14. Site Inspection: Performed by Sharon Mack and Susan Mackert on April 3, 2007. The inspection confirms that the application package received on November 30, 2006 is accurate and representative of actual site conditions. The site inspection report is located in the 2007 DMR file.

15. Receiving Stream Water Quality and Water Quality Standards:

a) Ambient Water Quality Data

The nearest Department of Environmental Quality ambient monitoring station is located at the Route 620 bridge crossing, approximately 4.2 rivermiles downstream from the facility outfall.

The receiving stream is not listed on the current 303(d) list. However, the 2006 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report (IR) gives an impaired classification for the following

downstream segment.

- VAN-E08R_RPP01A02

There is a bacteria impairment for this segment which extends 2.85 rivermiles from the confluence with an unnamed tributary to the Rappahannock River at approximately rivermile 142.5 and continues downstream until the confluence with Marsh Run. *E. coli* monitoring finds a bacterial impairment resulting in an impaired classification for recreation use. Sufficient exceedances of the instantaneous *E. coli* bacteria criterion (2 of 7 samples – 28.6%) were recorded at DEQ's ambient water quality monitoring station at the Route 620 bridge to assess this stream segment as not supporting of the recreation use goal for the 2006 water quality assessment.

The aquatic life and wildlife uses are considered fully supporting.

The fish consumption use was not assessed.

Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal, and the 2006 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that much of the mainstem Bay does not fully support this use support goal under Virginia's Water Quality Assessment guidelines. Nutrient enrichment is cited as one of the primary causes of impairment.

In response, the Virginia General Assembly amended the State Water Control Law in 2005 to include the *Chesapeake Bay Watershed Nutrient Credit Exchange Program*. This statute set forth total nitrogen and total phosphorus discharge restrictions within the bay watershed. Concurrently, the State Water Control Board adopted new water quality criteria for the Chesapeake Bay and its tidal tributaries. These actions necessitate the evaluation and the inclusion of nitrogen and phosphorus limits on discharges within the bay watershed.

b) Receiving Stream Water Quality Criteria

Part IX of 9 VAC 25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, Rappahannock River, is located within Section 3 of the Rappahannock River Basin and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C and maintain a pH of 6.0-9.0 standard units (S.U.).

Attachment 3 details other water quality criteria applicable to the receiving stream.

Ammonia:

The fresh water, aquatic life Water Quality Criteria for Ammonia are dependent on the instream temperature and pH. The 90th percentile temperature and pH values are used because they best represent the critical design conditions of the receiving stream. During the previous reissuance of this permit, ambient monitoring data collected from the facility's mixing zone (1997 – 2001) were evaluated for pH and temperature.

Staff has re-evaluated the receiving stream ambient monitoring data for pH and temperature (2004 – 2006) and finds no significant differences from the data used to establish ammonia criteria and subsequent effluent limits in the previous permit. Therefore, the previously established pH and temperature values are used to calculate ammonia criteria. Table 4 and Table 5 show the 90^{th} percentile comparisons. All pH and temperature data used to determine the 2007 90^{th} percentile values are available in the permit reissuance file.

Table 4 – 90th Percentile pH Comparison			
Season	1997 90th Percentile pH	2002 90th Percentile pH	2007 90th Percentile pH
June - November	7.4	7.59	7.8
December - May	7.35	7.31	7.3

Table 5 – 90th Percentile Temperature Comparison			
Season	1997 90th Percentile Temperature	2002 90th Percentile Temperature	2007 90th Percentile Temperature
June - November	23.6	25.9	23.3
December - May	18.3	18.1	19.8

Metals Criteria:
The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/l calcium carbonate). The average hardness of the receiving stream is 134 mg/l. The hardness-dependent metals criteria shown in Attachment 3 are based on this value.

Bacteria Criteria: The Virginia Water Quality Standards (9 VAC 25-260-170 B.) states sewage discharges shall be disinfected to achieve the following criteria:

1) *E. coli* bacteria per 100 ml of water shall not exceed the following:

	Geometric Mean[1]	Single Sample Maximum
Freshwater *E. coli* (N/100 ml)	126	235

[1]For two or more samples [taken during any calendar month].

c) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9 VAC 25-260-360, 370 and 380 designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Rappahannock River, is located within Section 3 of the Rappahannock River Basin. This section has not been designated with a special standard.

d) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched for records to determine if there are threatened or endangered species in the vicinity of the discharge. The following threatened or endangered species were identified within a 2 mile radius of the discharge: Bald Eagle, Upland Sandpiper and Barn Owl. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and therefore, protect the threatened and endangered species found near the discharge.

The stream that the facility discharges to is within a reach identified as having potential anadromous fish use. It is staff's best professional judgment that the proposed limits are protective of this use. The project review report can be found in the permit reissuance file.

16. Antidegradation (9 VAC 25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water

quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 2 based on an evaluation of ambient data from the DEQ station located on the Rappahannock River at the Route 29 (business) bridge in Remington and a review of the current 305(b)/303(d) Integrated Report (IR). No significant degradation to the existing water quality will be allowed. In accordance with current DEQ guidance, no significant lowering of water quality is to occur where permit limits are based on the following:

- The dissolved oxygen in the receiving stream is not lowered more than 0.2 mg/L from the existing levels;
- The pH of the receiving stream is maintained within the range 6.0-9.0 S.U.;
- There is compliance with all temperature criteria applicable to the receiving stream;
- No more than 25% of the unused assimilative capacity is allocated for toxic criteria established for the protection of aquatic life; and
- No more than 10% of the unused assimilative capacity is allocated for criteria for the protection of human health.

The antidegradation policy also prohibits the expansion of mixing zones to Tier 2 waters unless the requirements of 9 VAC 25-260-30.A.2. are met. The draft permit is not proposing an expansion of the existing mixing zone.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development :

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are the calculated on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:

Effluent data obtained from Attachment A has been reviewed and determined to be suitable for evaluation. Total copper and total zinc were detected, but were below the specific target value stated in Attachment A. During the previous reissuance, a limit was established for total zinc at the 2.5 MGD flow tier. As a result, total zinc will be reevaluated during this reissuance. Because total copper was below the specific target value stated in Attachment A, it will not be addressed during this reissuance. Total barium, total iron and total manganese were also detected. Because the results were below the specific target value stated in Attachment A and are of most concern to public water supply, it is staff's best professional judgment that these constituents do not need to be addressed during this reissuance. Please see the permit file for Attachment A analytical results.

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f) (Q_s)] - [(C_s) (f) (Q_s)]}{Q_e}$$

Where:
- WLA = Wasteload allocation
- C_o = In-stream water quality criteria
- Q_e = Design flow

f = Decimal fraction of critical flow from mixing evaluation
Q_s = Critical receiving stream flow
(1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
C_s = Mean background concentration of parameter in the receiving stream.

The Water Quality Standards contain two distinct mixing zone requirements. The first requirement is general in nature and requires the "use of mixing zone concepts in evaluating permit limits for acute and chronic standards in 9 VAC 25-260-140.B". The second requirement is specific and establishes special restrictions for regulatory mixing zones "established by the Board".

The Department of Environmental Quality uses a simplified mixing model to estimate the amount of mixing of a discharge with the receiving stream within specified acute and chronic exposure periods. The simplified model contains the following assumptions and approximations:

– The effluent enters the stream from the bank, either via a pipe, channel or ditch.
- The effluent velocity isn't significantly greater (no more than 1 - 2 ft/sec greater) than the stream velocity.
- The receiving stream is much wider than its depth (width at least ten times the depth).
- Diffusive mixing in the longitudinal direction (lengthwise) is insignificant compared with advective transport (flow).
- Complete vertical mixing occurs instantaneously at the discharge point. This is assumed since the stream depth is much smaller than the stream width.
- Lateral mixing (across the width) is a linear function of distance downstream.
- The effluent is neutrally buoyant (e.g. the effluent discharge temperature and salinity are not significantly different from the stream's ambient temperature and salinity).
- Complete mix is determined as the point downstream where the variation in concentration is 20% or less across the width and depth of the stream.
- The velocity of passing and drifting organisms is assumed equal to the stream velocity.

If it is suitably demonstrated that a reasonable potential for lethality or chronic impacts within the physical mixing area doesn't exist, then the basic complete mix equation, with 100% of the applicable stream flow, is appropriate. If the mixing analysis determines there is a potential for lethality or chronic impacts within the physical mixing area, then the proportion of stream flow that has mixed with the effluent over the allowed exposure time is used in the basic complete mix equation. As such, the wasteload allocation equation is modified to account for the decimal fraction of critical flow (f).

Staff derived wasteload allocations where parameters are reasonably expected to be present in an effluent (e.g., total residual chlorine where chlorine is used as a means of disinfection) and where effluent data indicate the pollutant is present in the discharge above quantifiable levels. With regard to the Outfall 001 discharge, ammonia as N is likely present since this is a WWTP treating sewage. Attachment A data indicate total copper and total zinc are present in the discharge, but below the specific target value. Because a limit was previously established for total zinc at the 2.5 MGD flow tier and due to the likely presence of ammonia, zinc will be evaluated to determine the need for limitations.

Antidegradation Wasteload Allocations (AWLAs).

Since the receiving stream has been determined to be a Tier II water, staff must also determine antidegradation wasteload allocations (AWLAs). The steady state complete mix equation is used substituting the antidegradation baseline (C_b) for the in-stream water quality criteria (C_o):

$$AWLA = \frac{C_b (Q_e + Q_s) - (C_s) (Q_s)}{Q_e}$$

Where: AWLA = Antidegradation-based wasteload allocation
C_b = In-stream antidegradation baseline concentration
Q_e = Design flow

Q_s = Critical receiving stream flow
(1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)

C_s = Mean background concentration of parameter in the receiving stream.

Calculated AWLAs for the pollutants noted in b. above are presented in Attachment 3.

c) Effluent Limitations, Outfall 001 – Toxic Pollutants

9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with (A)WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9 VAC 25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N/TKN:

In the current permit, staff established TKN limits for the months of April through October and ammonia criteria and limits for the month of November. For months where a TKN limit of 3.0 mg/l is necessary to protect the DO standard, no ammonia evaluation is required since it is believed that no ammonia is present where TKN is < 3.0 mg/l. Therefore, the month of November did not have a TKN limit due to the assumption that nitrification was no longer occurring.

2.0 MGD Flow Tier

The facility currently has an ammonia limit of 5.6 mg/l for the month of November. After discussion with Remington WWTP staff, it was determined that a TKN limit would be established for the month of November in lieu of the ammonia limit. During this reissuance, the facility will be given a TKN limit of 5.6 mg/l for the month of November. A well nitrified effluent from a well designed and operated biological nitrification plant normally contains residual, refractory organic nitrogen in the order of 3 mg/l. TKN measures the sum of organic nitrogen and free ammonia. Based on all these considerations, it is staff's best professional judgment that a TKN effluent limit of 5.6 mg/l is appropriate for this facility and will be protective of ammonia toxicity. The weekly average limit will be 11mg/l. Staff believes this is appropriate given the implementation of the *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia.*

2.5 MGD Flow Tier

The facility currently has an ammonia limit of 1.1 mg/l for the month of November. After discussion with Remington WWTP staff, it was determined that a TKN limit would be established for the month of November in lieu of the ammonia limit. During this reissuance, the facility will be given a TKN limit of 4.0 mg/l for the month of November. A well nitrified effluent from a well designed and operated biological nitrification plant normally contains residual, refractory organic nitrogen in the order of 3 mg/l. TKN measures the sum of organic nitrogen and free ammonia. Based on all these considerations, it is staff's best professional judgment that a TKN effluent limit of 4.0 mg/l is appropriate for this facility and will be protective of ammonia toxicity. The weekly average limit will be 4.0 mg/l. Staff believes this is appropriate given the implementation of the *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia.*

The facility currently has an ammonia limit of 11.2 mg/l for the months of December - March. After discussion with Remington WWTP staff, it was determined that a TKN limit would be established for

the months of December - March in lieu of the ammonia limit. During this reissuance, the facility will be given a TKN limit of 11 mg/l for the months of December - March. A well nitrified effluent from a well designed and operated biological nitrification plant normally contains residual, refractory organic nitrogen in the order of 3 mg/l. TKN measures the sum of organic nitrogen and free ammonia. Based on all these considerations, it is staff's best professional judgment that a TKN effluent limit of 11 mg/l is appropriate for this facility and will be protective of ammonia toxicity. The weekly average limit will be 14 mg/l. Staff believes this is appropriate given the implementation of the *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia.*

2) Metals/Organics:

Staff established a total recoverable zinc limit for the 2.5 MGD tier in the existing permit. Based on an evaluation of recent data, the total recoverable zinc limit for the 2.5 MGD tier will be carried forward with this reissuance. The effluent limitation evaluation for zinc is provided in Attachment 4.

The existing monitoring frequency at the 2.0 MGD and 2.5 MGD tier will be carried forward.

d) Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), biochemical oxygen demand-5 day (BOD_5), $CBOD_5$, total suspended solids (TSS), total kjeldahl nitrogen (TKN) and pH limitations are proposed.

Dissolved Oxygen, BOD_5 and TKN limitations are based on the regional stream model which was conducted in 1990 (Attachment 5) and 1996 (Attachment 6). The DO and BOD_5 limits are being carried forward with this reissuance. Staff is recommending a TKN limit of 7.4 mg/l from April through November for the reasons stated above in section 17.c.1.

It is staff's practice to equate the Total Suspended Solids limits with the BOD_5/$CBOD_5$ limits. TSS limits are established to equal BOD_5 limits since the two pollutants are closely related in terms of treatment of domestic sewage.

pH limitations are set at the water quality criteria.

E. coli limitations are in accordance with the Water Quality Standards 9 VAC25-260-170.

e) Effluent Annual Average Limitations and Monitoring, Outfall 001 – Nutrients

VPDES Regulation 9 VAC 25-31-220(D) requires effluent limitations that are protective of both the numerical and narrative water quality standards for state waters, including the Chesapeake Bay.

As discussed in Section 15, significant portions of the Chesapeake Bay and its tributaries are listed as impaired with nutrient enrichment cited as one of the primary causes. Virginia has committed to protecting and restoring the Bay and its tributaries.

The State Water Control Board adopted new Water Quality Criteria for the Chesapeake Bay in March 2005. In addition to the Water Quality Standards, there are three new regulations that necessitate nutrient limitations:

- 9 VAC 25-40 - *Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed* requires discharges with design flows of $\geq$0.04 mgd to treat for TN and TP to either BNR levels (TN = 8 mg/l; TP = 1.0 mg/l) or SOA levels (TN = 3.0 mg/l and TP = 0.3 mg/l).

- 9 VAC 25-720 – *Water Quality Management Plan Regulation* sets forth TN and TP maximum wasteload allocations for facilities with design flows of $\geq$0.5 mgd limiting the mass loading from these discharges.

- 9 VAC 25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia* was approved by the State Water Control Board on September 6, 2006 and became effective January 1, 2007. This regulation specifies and controls the nitrogen and phosphorus loadings from facilities and specifies facilities that must register under the general permit. Nutrient loadings for those facilities registered under the general permit as well as compliance schedules and other permit requirements, shall be authorized, monitored, limited, and otherwise regulated under the general permit and not this individual permit.

Monitoring for Total Kjeldahl Nitrogen and Nitrate + Nitrite is included in this permit. The monitoring is needed to protect the Water Quality Standards of the Chesapeake Bay. Monitoring frequencies are set at the frequencies set forth in 9 VAC 25-820.

Annual average effluent limitations, as well as monthly and year to date calculations, for Total Nitrogen and Total Phosphorus are included in this individual permit for the 2.0 MGD and 2.5 MGD tiers.

For the 2.0 MGD flow, concentration limits of 8.0 mg/l TN annual average and 1.5 mg/l TP annual average are needed based on 9 VAC 40-70.A(4). The limits are based in part on point source grant and operation and maintenance agreement contract #440-S-00-02. This grant agreement is found within the permit reissuance file. Loading limits will be governed by the general permit mentioned above.

For the 2.5 MGD flow, concentration limits of 8.0 mg/l TN annual average and 1.5 mg/l TP annual average are needed based on 9 VAC 40-70.A(4). The limits are based in part on point source grant and operation and maintenance agreement contract #440-S-00-02. This grant agreement is found within the permit reissuance file. Loading limits will be governed by the general permit mentioned above.

f) Effluent Limitations and Monitoring Summary.

The effluent limitations are presented in the following tables based on flow tier. Limits were established for Flow, $CBOD_5$, Total Suspended Solids, TKN, pH, Dissolved Oxygen and *E.coli.*

The limit for Total Suspended Solids is based on Best Professional Judgement.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/l), with the flow values (in MGD) and a conversion factor of 3.785.

The mass loading (lb/d) for TKN monthly and weekly averages were calculated by multiplying the concentration values (mg/l), with the flow values (in MGD) and a conversion factor of 8.3438.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19. Effluent Limitations/Monitoring Requirements: Outfall 001

Design flow is 2.0 MGD.
Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration or the issuance of the Certificate to Operate (CTO) for 2.5 MGD

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	N/A	N/A	NL	Continuous	TIRE
pH	3	N/A	N/A	6.0 S.U.	9.0 S.U.	1/D	Grab
$CBOD_5$	3,5	20 mg/L 150 kg/day	30 mg/L 230 kg/day	N/A	N/A	5D/W	24H-C
Total Suspended Solids (TSS)	2	20 mg/L 150 kg/day	30 mg/L 230 kg/day	N/A	N/A	5D/W	24H-C
Dissolved Oxygen	3	N/A	N/A	6.5 mg/L	N/A	1/D	Grab
Total Kjeldahl Nitrogen (TKN) (April - October)	3,5	3.0 mg/L 50 lbs/day	4.5 mg/L 75 lbs/day	N/A	N/A	5D/W	24H-C
Total Kjeldahl Nitrogen (TKN) (November)	3,5	5.6 mg/L 93 lbs/day	11 mg/L 180 lbs/day	N/A	N/A	5D/W	24H-C
E. coli (Geometric Mean)	3	126 n/100mls	N/A	N/A	N/A	5D/W	Grab
Nitrate+Nitrite, as N	3, 6	NL mg/L	N/A	N/A	N/A	1/W	24H-C
Total Nitrogen [a.]	3, 6	NL mg/L	N/A	N/A	N/A	1/W	Calculated
Total Nitrogen – Year to Date [b.]	3, 6	NL mg/L	N/A	N/A	N/A	1/M	Calculated
Total Nitrogen - Calendar Year [b.]	3, 6	8.0 mg/L	N/A	N/A	N/A	1/Y	Calculated
Total Phosphorus	3	NL mg/L	N/A	N/A	N/A	1/W	24H-C
Total Phosphorus – Year to Date [b.]	3, 6	NL mg/L	N/A	N/A	N/A	1/M	Calculated
Total Phosphorus - Calendar Year [b.]	3, 6	1.5 mg/L	N/A	N/A	N/A	1/Y	Calculated
Zinc, Total Recoverable	2	NL	NL	N/A	N/A	1/6M	Grab
Chronic Toxicity – *C. dubia* (TU_c)		N/A	N/A	N/A	NL	1/Y	24H-C
Chronic Toxicity – *P. promelas* (TU_c)		N/A	N/A	N/A	NL	1/Y	24H-C

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgement
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Stream Model- Attachments 5 and 6
6. 9 VAC 25-40 (Nutrient Regulation)

MGD = Million gallons per day.
N/A = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.
TIRE = Totalizing, indicating and recording equipment.

1/D = Once every day.
1/W = One day per week.
5D/W = Five days a week.
1/M = Once every month.
1/3M = Once every three months.
1/6M = Once every six months.
1/Y = Once every twelve months.

24H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 24-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of twenty-four (24) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum twenty-four (24) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by ≥10% or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for the calculation of the Nutrient Calculations.

*The quarterly monitoring periods shall be January 1 - March, 31, April 1 - June 30, July 1 - September 30 and October 1 - December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

**The semiannual monitoring periods shall be January 1 through June 30 and July 1 through December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (July 10 and January 10, respectively).

19. Effluent Limitations/Monitoring Requirements: Outfall 001

Design flow is 2.5 MGD.
Effective Dates: Beginning with the issuance of the Certificate to Operate (CTO) for 2.5 MGD or until the expiration date of the permit.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	N/A	N/A	NL	Continuous	TIRE
pH	3	N/A	N/A	6.0 S.U.	9.0 S.U.	1/D	Grab
$CBOD_5$	3,5	20 mg/L 190 kg/day	30 mg/L 280 kg/day	N/A	N/A	5D/W	24H-C
Total Suspended Solids (TSS)	2	20 mg/L 190 kg/day	30 mg/L 280 kg/day	N/A	N/A	5D/W	24H-C
Dissolved Oxygen	3	N/A	N/A	6.5 mg/L	N/A	1/D	Grab
Total Kjeldahl Nitrogen (TKN) (April – October)	3,5	3.0 mg/L 63 lbs/day	4.5 mg/L 94 lbs/day	N/A	N/A	5D/W	24H-C
Total Kjeldahl Nitrogen (TKN) (November)	3,5	4.0 mg/L 83 lbs/day	4.0 mg/L 83 lbs/day	N/A	N/A	5D/W	24H-C
Total Kjeldahl Nitrogen (TKN) (December – March)	3,5	11 mg/L 230 lbs/day	14 mg/L 290 lbs/day	N/A	N/A	1/D	24H-C
E. coli (Geometric Mean)	3	126 n/100mls	N/A	N/A	N/A	5D/W	Grab
Zinc, Total Recoverable	2	160 µg/L	160 µg/L	N/A	N/A	1/M	Grab
Nitrate+Nitrite, as N	3, 6	NL mg/L	N/A	N/A	N/A	1/W	24H-C
Total Nitrogen [a.]	3, 6	NL mg/L	N/A	N/A	N/A	1/W	Calculated
Total Nitrogen – Year to Date [b.]	3, 6	NL mg/L	N/A	N/A	N/A	1/M	Calculated
Total Nitrogen - Calendar Year [b.]	3, 6	8.0 mg/L	N/A	N/A	N/A	1/Y	Calculated
Total Phosphorus	3	NL mg/L	N/A	N/A	N/A	1/W	24H-C
Total Phosphorus – Year to Date [b.]	3, 6	NL mg/L	N/A	N/A	N/A	1/M	Calculated
Total Phosphorus - Calendar Year [b.]	3, 6	1.5 mg/L	N/A	N/A	N/A	1/Y	Calculated
Chronic Toxicity – *C. dubia* (TU_c)		N/A	N/A	N/A	NL	1/3M	24H-C
Chronic Toxicity – *P. promelas* (TU_c)		N/A	N/A	N/A	NL	1/3M	24H-C

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgement
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Stream Model- Attachments 5 and 6
6. 9 VAC 25-40 (Nutrient Regulation)

MGD = Million gallons per day.
N/A = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.
TIRE = Totalizing, indicating and recording equipment.

1/D = Once every day.
1/M = Once every month.
5D/W = Five days a week.
1/M = Once every month.
1/3M = Once every three months.
1/Y = Once every twelve months.

24H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 24-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of twenty-four (24) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum twenty-four (24) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by ≥10% or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for the calculation of the Nutrient Calculations.

*The quarterly monitoring periods shall be January 1 - March, 31, April 1 - June 30, July 1 - September 30 and October 1 - December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

20. Other Permit Requirements :

a) Part I.B. of the permit contains additional quantification levels and compliance reporting instructions.

9 VAC 25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

The calculations for the Nitrogen and Phosphorus parameters shall be in accordance with the calculations set for in 9 VAC 25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia*.

b) Permit Section Part I.C., details the requirements of a Pretreatment Program.

The VPDES Permit Regulation at 9 VAC 25-31-210 requires monitoring and 9 VAC 25-31-220.D. requires the effluent to protect water quality. The VPDES Permit Regulation at 9 VAC 25-31-730. through 900., and 40 CFR Part 403 requires POTWs with a design flow of >5 MGD and receiving from Industrial Users (IUs) pollutants which pass through or interfere with the operation of the POTW or are otherwise subject to pretreatment standards to develop a pretreatment program.

This treatment works is a POTW with a design flow rate of 2.0 MGD, but has an additional tiered of 2.5 MGD. Fauquier County Water and Sanitation Authority also owns and operates collection systems in the Bealeton area (2,706 connections) and the Opal area (180 connections) which contribute to the flow received by the Remington WWTP.

The Pretreatment Program for Fauquier County Water and Sanitation Authority was originally approved on March 21, 2006. The Remington WWTP has one Significant Industrial User (SIU) regulated through this program (Old Dominion Electric Cooperative). Treated effluent from the Remington WWTP is used by Old Dominion Electric Cooperative as process cooling water. Old Dominion Electric Cooperative intermittently discharges approximately 37,500 gpd to the Remington WWTP

The pretreatment program conditions in the proposed permit reissuance will include: implementation of the approved pretreatment program that complies with the Clean Water Act, the State Water Control Law, state regulations and the approved program.

Program requirements and reporting are found in this section of the permit.

c) Permit Section Part I.D., details the requirements for Toxics Management Program.

The VPDES Permit Regulation at 9 VAC 25-31-210 requires monitoring and 9 VAC 25-31-220.I, requires limitations in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act. A TMP is imposed for municipal facilities with a design rate >1.0 MGD, with an approved pretreatment program or required to develop a pretreatment program, or those determined by the Board based on effluent variability, compliance history, IWC and receiving stream characteristics (Attachment 7).

d) Permit Section Part 1.E. details requirements of the Sewage Sludge Management Plan, Sludge Monitoring and Additional Reporting Requirements.

1. Regulations:

The VPDES Permit Regulation (VAC 25-31-10 et seq.), has incorporated technical standards for the use or disposal of sewage sludge, specifically land application and surface disposal, promulgated under 40 CFR Part 503.

The Permit Regulation (9 VAC 25-31-420) also establishes the standards for the use or disposal of sewage sludge. This part establishes standards that consist of general requirements, pollutant limits, management practices, and operational standards for the final use or disposal of sewage sludge generated during the treatment of domestic sewage in the treatment works.

2. Evaluations:

Sludge Classification:

The Remington WWTP is considered as Class I sludge management facility. The permit regulation (9 VAC 25-31-500) defines a Class I sludge management facility as any POTW which is required to have an approved pretreatment program defined under Part VII of the VPDES Permit Regulation (9 VAC 25-31-730 to 900) and/or any treatment works treating domestic sewage sludge that has been classified as a Class I facility by the Board because of the potential for its sewage sludge use or disposal practice to adversely affect public health and the environment.

Sludge Pollutant Concentration:
The average pollutant concentrations from sewage sludge analyses provided as part of the Remington WWTP application for the permit reissuance are presented in Table 6. The analysis results are from samples collected March 28, 2003, May 29, 2003, November 24, 2003, February 11, 2004, May 21, 2004 and December 8, 2005.

Table 6 – Remington WWTP Results

Pollutant	Average Concentration (mg/kg dry weight)	Sample Type
Arsenic	10.97	Composite
Cadmium	4.88	Composite
Copper	621.66	Composite
Lead	55.58	Composite
Mercury	2.28	Composite
Molybdenum	10.48	Composite
Nickel	23.75	Composite
Selenium	9.32	Composite
Zinc	1,166.66	Composite

All sewage sludge applied to the land must meet the ceiling concentration for pollutants, listed in Table 7. Sewage sludge applied to the land must also meet either pollutant concentration limits, cumulative pollutant loading rate limits, or annual pollutant loading rate limits, also listed in Table 7.

Cumulative pollutant loading limits or annual pollutant loading limits may be applied to sewage sludge exceeding pollutant concentration limits but meeting the ceiling concentrations, depending upon the levels of treatment achieved and the form (bulk or bag) of sludge applied. It should be noted that ceiling concentration limits are instantaneous values and pollutant concentration limits are monthly average values. Calculations of cumulative pollutant loading should be based on the monthly average values and the annual whole sludge application rate.

Table 7- SEWAGE SLUDGE POLLUTANT LIMITS

Pollutant	Ceiling Concentration Limits for All Sewage Sludge Applied to Land (mg/kg)*	Pollutant Concentration Limits for EQ and PC Sewage Sludge (mg/kg)*	Cumulative Pollutant Loading Rate Limits for CPLR Sewage Sludge (kg/hectare)	Annual Pollutant Rate Limits for APLR Sewage Sludge (kg/hectare/356 day period)**
Arsenic	75	41	41	2.0
Cadmium	85	39	39	1.9
Copper	4,300	1,500	1,500	75
Lead	840	300	300	15
Mercury	57	17	17	0.85
Molybdenum	75	---	---	---
Nickel	420	420	420	21
Selenium	100	100	100	5.0
Zinc	7,500	2,800	2,800	140
Applies to:	All sewage sludge that is land applied	Bulk sewage sludge and bagged sewage sludge	Bulk sewage sludge	Bagged sewage
From VPDES Permit Reg. Part VI	Table 1, 9 VAC 25-31-540	Table 3, 9 VAC 25-31-540	Table 2, 9 VAC 25-31-540	Table 4, 9 VAC 25-31-540

*Dry-weight basis
**Bagged sewage sludge is sold or given away in a bag or other container.

Comparing data from Table 6 with Table 7 shows that metal concentrations are significantly below the ceiling and PC concentration requirements.

3. Options for Meeting Land Application:

There are four equally safe options for meeting land application requirements. The options include the Exceptional Quality (EQ) option, the Pollutant Concentration (PC) option, the Cumulative Pollutant Loading Rate (CPLR) option, and the Annual Pollutant Loading Rate (APLR) option.

Pollutant Concentration (PC) is the type of sludge that may only be applied in bulk and is subject to general requirements and management practices; however, tracking of pollutant loadings to the land is not required. The sludge from the Remington WWTP is considered Pollutant Concentration (PC) sewage sludge for the following reasons:

a) The bulk sewage sludge from the Remington WWTP meets the PC limits in Table 1 of VPDES Permit Regulation Part VI, 9 VAC 25-31-540.

b) The VPDES Permit Regulation, Part VI, Subpart D, (9 VAC 25-31-690 through 720) establishes the requirements for pathogen reduction in sewage sludge. The Remington WWTP is considered to produce a Class B sludge in accordance with the regulation (9 VAC 25-31-710.B.2. - Class B -Alternative 2. Alternative 2 defines Class B sludge as "Sewage sludge that is used or disposed that has been treated in a process that is equivalent to a Process to Significantly Reduce Pathogens (PSRP), as described in (9 VAC 25-31-710.D.). The Remington WWTP treats sludge using an aerobic digestion process to reduce pathogens in accordance with the requirements of (9 VAC 25-31-710.D.3.).

c) The VPDES Permit Regulation, Part VI, Subpart D, (9 VAC 25-31-690 through 720) also establishes the requirements for Vector Attraction Reduction in sewage sludge. Based on the information supplied

with the VPDES Sludge Application, the Remington WWTP meets the requirements for Vector Attraction Reduction as defined by (9 VAC 25-31-720.B.1). Vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20 degrees Celcius. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 15 percent, vector attraction is achieved.

4) Parameters to be Monitored:

In order to assure the sludge quality, the following parameters require monitoring: Arsenic, Cadmium, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, and Zinc.

In order to ensure that proper nutrient management and pH management practices are employed, the following parameters are required: pH, Total Kjeldahl Nitrogen, Ammonia Nitrogen, Nitrate Nitrogen, Total Phosphorus, Total Potassium, and Alkalinity (lime treated sludge should be analyzed for percent calcium carbonate equivalence). The nutrient and pH monitoring requirements apply only if the permittee land applies their own sludge. Since Remington WWTP has contracted the land application responsibilities to Recyc Systems, Incorporated of Remington, Virginia, they are not required to monitor for nutrients, pH, Total Potassium and Alkalinity.

Soil monitoring in conjunction with soil productivity information is critical, especially for frequent applications, to making sound sludge application decisions from both an environmental and an agronomic standpoint. Since Remington WWTP has contracted the land application responsibilities to Recyc Systems, Incorporated, of Remington, Virginia, they are not required to perform soil monitoring.

5) Monitoring Frequency:

The monitoring frequency is based on the amount of sewage sludge applied in a given 365-day period. The permit application indicates that the total dry metric tons of sewage sludge generated at Remington WWTP are 285.8 dry metric tons per 365-day period. In the permit manual, the monitoring frequency for facilities that produce up to 290 metric tons per 365-day period is once per year. This reissuance proposes a monitoring frequency of 1/year.

Remington WWTP is required to provide the results of all monitoring performed in accordance with Part I.A., and information on management practices and appropriate certifications no later than February 19th of each year (as required by the 503 regulations) to the Northern Virginia Regional Office of the Department of Environmental Quality. Each report must document the previous calendar year's activities.

6) Sampling:

Representative sampling is an important aspect of monitoring. Because the pollutant limits pertain to the quality of the final sewage sludge applied to the land, samples must be collected after the last treatment process prior to land application. Composite samples should be required for all samplings from this facility.

7) Sludge Management Plan (SMP):

The SMP is required to be part of the VPDES permit application. The VPDES Sewage Sludge Permit Application Form and its attachments will constitute the applicant's SMP. Any proposed sewage treatment works treating domestic sewage must submit a SMP with the appropriate VPDES permit application forms at least 180 days prior to the date proposed for commencing operations. The permittee shall conduct all sewage sludge use or disposal activities in accordance with the SMP approved with the issuance of this permit. Any proposed changes in the sewage sludge use or disposal practices or procedures followed by the permittee shall be documented and submitted for Virginia Department of Environmental Quality and Virginia Department of Health review and approval no less than 90 days prior to the effective date of the changes.

Upon approval, the SMP becomes an enforceable part of the permit. The permit may be modified or

alternatively revoked and reissued to incorporate limitations/conditions necessitated by substantial changes in sewage sludge use or disposal practices.

Remington WWTP has submitted the VPDES Sewage Sludge Permit Application Form and its attachments. Their SMP dated March 1996 is on file at the Northern Virginia Regional Office of the Department of Environmental Quality.

8) Reporting Requirements:

The reporting requirements are for POTWs with a design flow rate equal to or greater than 1 MGD (majors), POTWs that serve a population of 10,000 or greater, and Class I sludge management facilities. A permit special condition, which requires these generators to submit an annual report on February 19th of each year, is included. The Remington WWTP shall use the Discharge Monitoring Report (DMR) forms as part of the annual report. A sample form (SP1 and S01) with proper DMR parameter codes and its instructions are provided. In addition to the DMR forms, the generators who land apply sewage sludge are responsible for submitting the additional information required by 9 VAC 25-31-590, *i.e.*, appropriate certification statements, descriptions of how pathogen and vector attraction reduction requirements are met, descriptions of how the management practices (if applicable) are being met, and descriptions of how site restrictions (if applicable) are being met.

9) Records Keeping:

This special condition outlines record retention requirements for sludge meeting Class B pathogen reduction and vector attraction reduction alternative 1-10. Table 8 presents the record keeping requirements.

Table 8: Record Keeping for PC Sludge

1	Pollutant concentrations of each pollutant in Part I.A.4. of the permit;
2	Description of how the pathogen reduction requirement in Part I.A.4. of the permit are met;
3	Description of how the vector attraction requirements in Part I.A.4. of the permit are met;
4	Description of how the management practice specified in the approved Sludge Management Plan and/or the permit are met;
5	Description of how the site restriction specified in the Sludge Management Plan and/or the permit are met;
6	Certification statement in Part I.E.3.a of the permit.

21. Other Special Conditions :

a) 95% Capacity Reopener. The VPDES Permit Regulation at 9 VAC 25-31-200.B.2. requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a POTW.

b) Indirect Dischargers. Required by VPDES Permit Regulation, 9 VAC 25-31-280 B.9 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

c) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190.E. The permittee shall submit a statement confirming the accuracy and completeness of the current O&M Manual to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO) by June 14, 2008. Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

d) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.

e) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9 VAC 25-31-200 D, and Rules and Regulations for Waterworks and Wastewater Works Operators (18 VAC 160-20-10 et seq.) requires licensure of operators. This facility requires a Class II operator.

f) Reliability Class. The Sewage Collection and Treatment Regulation at 9 VAC 25-790 requires sewerage works achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. The facility is required to meet a reliability Class of I.

g) Water Quality Criteria Reopener. The VPDES Permit Regulation at 9 VAC 25-31-220 D. requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should data collected and submitted for Attachment A of the permit, indicate the need for limits to ensure protection of water quality criteria, the permit may be modified or alternately revoked and reissued to impose such water quality-based limitations.

h) Water Quality Criteria Monitoring. State Water Control Law §62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems, or the attainment of water quality goals, according to 40 CFR Part 131, Water Quality Standards, subpart 131.11. To ensure that water quality criteria are maintained, the permittee is required to analyze the facility's effluent for the substances noted in Attachment A of this VPDES permit.

i) Sludge Reopener. The VPDES Permit Regulation at 9 VAC 25-31-200.C.4. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.

j) Sludge Use and Disposal. The VPDES Permit Regulation at 9 VAC 25-31-100.P., 220.B.2., and 420-720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. Technical requirements may be derived from the Virginia Department of Health's Biosolids Use Regulations, 12 VAC 5-585-10 et seq. The facility includes a treatment works treating domestic sewage.

k) E3/E4. The annual average concentration limitations for Total Nitrogen and/or Total Phosphorus are suspended during any calendar year in which the facility is considered by DEQ to be a participant in the Virginia Environmental Excellence Program in good standing at either the Exemplary Environmental Enterprise (E3) level or the Extraordinary Environmental Enterprise (E4) level, provided that certain conditions are met.

l) Nutrient Reopener. 9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9 VAC 25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

a) Special Conditions:
1) An E3/E4 special condition was added to the permit.
2) A TMDL reopener special condition was added to the permit.

b) Monitoring and Effluent Limitations:
1) The 1.4 MGD flow tier was removed from the permit. By e-mail dated December 14, 2007, the facility completed pump related and UV related equipment changes for the 2.0 MGD flow tier. See staff comments in Section 27 below for additional information. Correspondence pertaining to equipment changes is found within the reissuance file.

2) An *E. coli* limit of 126 bacteria/100 ml (geometric mean) was added to the effluent limitations based on 9 VAC-25-260-170. Fecal coliform was removed.
3) Monitoring was established for Nitrate + Nitrite at the 2.0 MGD and 2.5 MGD flow tiers.
4) Concentration limits for Total Nitrogen and Total Phosphorous were established per 9 VAC-25-40 (Nutrient Regulation) and per point source grant and operation and maintenance agreement contract #440-S-00-02 for the 2.0 MGD and 2.5 MGD flow tiers. Total Nitrogen and Total Phosphorous loading limits are governed under the facility's watershed general permit (VAN020053).
5) A TKN monthly average limit of 5.6 mg/l and weekly average limit of 11 mg/l was added to the permit for the 2.0 MGD flow tier for November in lieu of the ammonia limit. The ammonia limit for the month of November was removed.
6) A TKN monthly average limit of 4.0 mg/l and weekly average limit of 4.0 mg/l was added to the permit for the 2.5 MGD flow tier for November in lieu of the ammonia limit. The ammonia limit for the month of November was removed.
7) A TKN monthly average limit of 11 mg/l and weekly average limit of 14 mg/l was added to the permit for the 2.5 MGD flow tier for the months of December - March in lieu of the ammonia limit. The ammonia limit for the months of December - March was removed.
8) TKN loading units were changed from kg/day to lbs/day to be consistent with *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia*.
9) A TKN monthly average limit of 230 lbs/day and weekly average limit of 290 lbs/day was added to the permit for the 2.5 MGD flow tier for the months of December – March.
10) Storm water management language has been removed from the permit. With the permit reapplication package, the facility submitted a no exposure certification certifying that there are no discharges of storm water contaminated by exposure to industrial activities or materials from the facility. In addition, modifications have been implemented in the area of the solids handling building to divert storm water runoff. New cement curbing was installed in the area of the solids handling building during the winter of 2007. This curbing directs storm water flow to a trench drain located at the front of the solids handling building. Storm water then flows via an underground pipe to the gravity thickener where it is returned to the treatment process.

24. Variances/Alternate Limits or Conditions:

N/A

25. Public Notice Information:

First Public Notice Date: January 16, 2008 Second Public Notice Date: January 23, 2008

Public Notice Information is required by 9 VAC 25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: Northern Virginia DEQ Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3853, sdmackert@deq.virginia.gov. See Attachment 8 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

26. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):

The receiving stream, Rappahannock River, is not listed on the current 303(d) list. However, the 2006 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report (IR) gives an impaired classification for a downstream segment which extends 2.85 rivermiles from the confluence with an unnamed tributary to the Rappahannock River at approximately rivermile 142.5 and continues downstream until the confluence with Marsh Run. A bacterial impairment for *E. coli* had resulted in an impaired classification for recreation use and this segment is considered as not supporting of the recreation goal.

TMDL Reopener: This special condition is to allow the permit to reopened if necessary to bring it in compliance with any applicable TMDL that may to developed and approved for the receiving stream.

27. Additional Comments:

Previous Board Action(s): N/A

Staff Comments: A site visit was conducted on January 9, 2008, by Susan Mackert and Alison Thompson to verify that pump and UV equipment installation was complete and that the equipment was operational. Baffles were removed from each of the three UV units and replaced with additional UV bulbs to provide the reliability necessary for the 2.0 MGD flow tier. Because of age and use, bearings and casings were replaced on the return pumps. The chief operator confirmed that the pumps are capable of handling the 2.0 MGD flow tier.

Public Comment: Two individuals submitted questions and/or comments on the draft permit. Neither commenter requested a public hearing on the draft permit. Responses were provided to the questions and/or comments with no further action necessary.

EPA Checklist: The checklist can be found in Attachment 9.

MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN VIRGINIA REGIONAL OFFICE

13901 Crown Court Woodbridge, VA 22193

SUBJECT: Flow Frequency Determination
Remington WWTP (VA0076805)

TO: Permit Re-issuance File

FROM: Susan Mackert

DATE: March 20, 2007

This memo supersedes the November 19, 2001 memo from Paul Herman concerning the subject VPDES permit due to the availability of additional monitoring data.

The Remington WWTP discharges to the Rappahannock River near Remington, Virginia. Stream flow frequencies are required at this site for use in developing effluent limitations for the VPDES permit.

The USGS has operated a continuous record gage on the Rappahannock River near Remington, Virginia (#01664000) since 1942. The gage is approximately 2000 feet upstream of the discharge point. The flow frequencies for the gage and the discharge point are presented below. The values at the discharge point were determined by drainage area proportions and do not address any withdrawals, discharges or springs lying between the gage and the outfall.

Rappahannock River at Remington, VA (#01664000):

Drainage Area = 620 mi^2

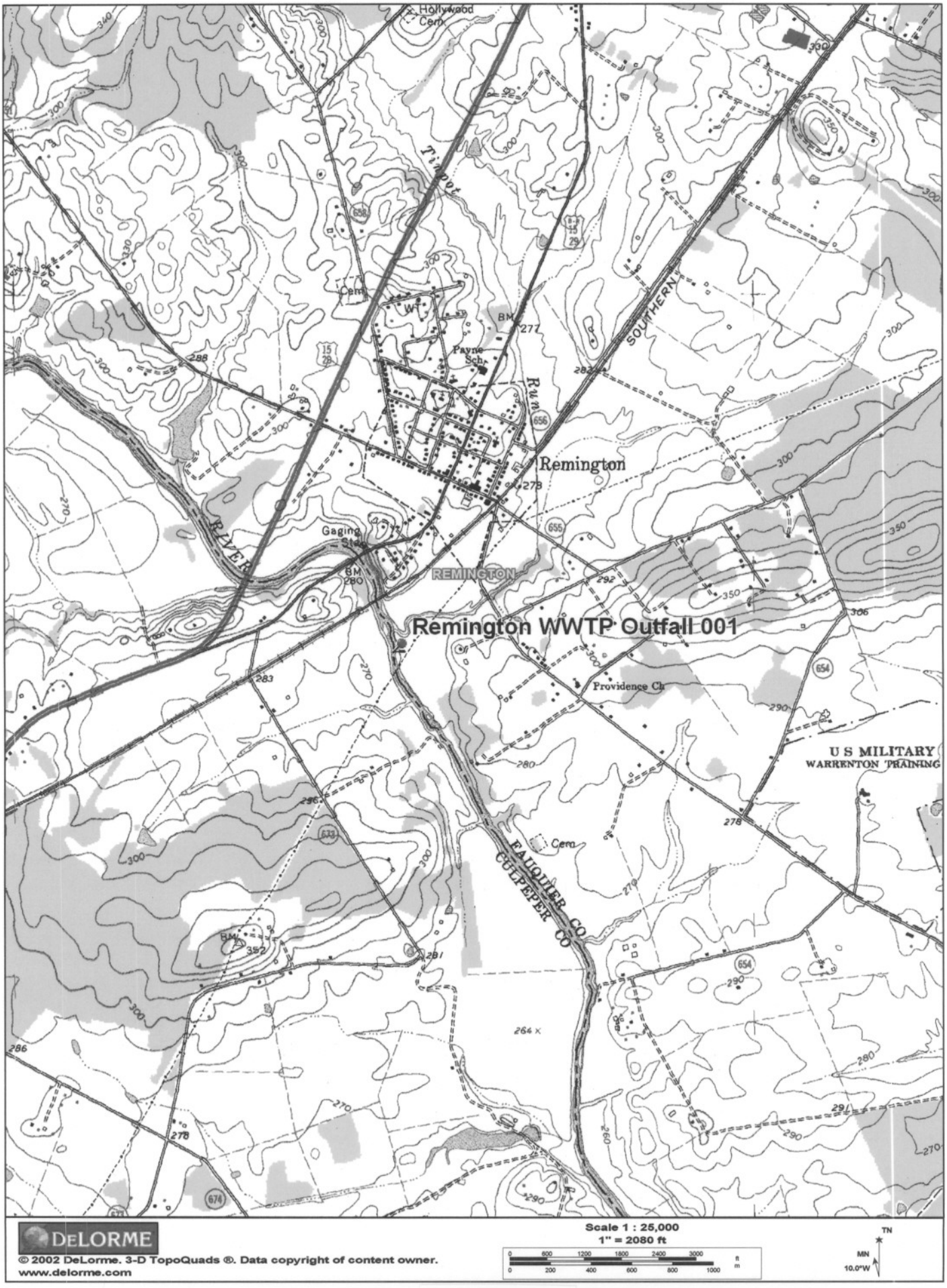
1Q10 = 8.5 cfs	High Flow 1Q10 = 78 cfs
7Q10 = 10 cfs	High Flow 7Q10 = 97 cfs
30Q10 = 19 cfs	High Flow 30Q10 = 136 cfs
30Q5 = 32 cfs	Harmonic Mean = 154 cfs

Rappahannock River at discharge point:

Drainage Area = 632 mi^2

1Q10 = 8.7 cfs (5.6 mgd)	High Flow 1Q10 = 80 cfs (52 mgd)
7Q10 = 10 cfs (6.4 mgd)	High Flow 7Q10 = 99 cfs (64 mgd)
30Q10 = 19 cfs (12 mgd)	High Flow 30Q10 = 139 cfs (89 mgd)
30Q5 = 33 cfs (21 mgd)	Harmonic Mean = 157 cfs (101 mgd)

The high flow months are December through May.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REMINGTON
Remington WWTP Outfall 001
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674
SOUTHERN
RIVER
DELORME
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www.delorme.com
Scale 1 : 25,000
1" = 2080 ft
TN
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FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Remington WWTP - 2.0 MGD Permit No.: VA0076805

Receiving Stream: Rappahannock River Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	134 mg/L	1Q10 (Annual) =	5.6 MGD	Annual - 1Q10 Mix =	5.75 %	Mean Hardness (as CaCO3) =	312 mg/L
90% Temperature (Annual) =	23.1 deg C	7Q10 (Annual) =	6.4 MGD	- 7Q10 Mix =	100 %	90% Temp (Annual) =	deg C
90% Temperature (Wet season) =	19.8 deg C	30Q10 (Annual) =	12 MGD	- 30Q10 Mix =	100 %	90% Temp (Wet season) =	deg C
90% Maximum pH =	7.69 SU	1Q10 (Wet season) =	52 MGD	Wet Season - 1Q10 Mix =	33.99 %	90% Maximum pH =	8.04 SU
10% Maximum pH =	SU	30Q10 (Wet season)	89 MGD	- 30Q10 Mix =	100 %	10% Maximum pH =	SU
Tier Designation (1 or 2) =	2	30Q5 =	21 MGD			Discharge Flow =	2 MGD
Public Water Supply (PWS) Y/N? =	n	Harmonic Mean =	101 MGD				
Trout Present Y/N? =	n	Annual Average =	N/A MGD				
Early Life Stages Present Y/N? =	y						

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	–	–	na	2.7E+03	–	–	na	3.1E+04	–	–	na	2.7E+02	–	–	na	3.1E+03	–	–	na	3.1E+03
Acrolein	0	–	–	na	7.8E+02	–	–	na	9.0E+03	–	–	na	7.8E+01	–	–	na	9.0E+02	–	–	na	9.0E+02
Acrylonitrile [C]	0	–	–	na	6.6E+00	–	–	na	3.4E+02	–	–	na	6.6E-01	–	–	na	3.4E+01	–	–	na	3.4E+01
Aldrin [C]	0	3.0E+00	–	na	1.4E-03	3.5E+00	–	na	7.2E-02	7.5E-01	–	na	1.4E-04	2.9E+00	–	na	7.2E-03	2.9E+00	–	na	7.2E-03
Ammonia-N (mg/l) (Yearly)	0	8.88E+00	2.47E+00	na	–	1.0E+01	1.7E+01	na	–	3.27E+00	6.18E-01	na	–	1.2E+01	4.3E+00	na	–	1.0E+01	4.3E+00	na	–
Ammonia-N (mg/l) (High Flow)	0	1.41E+01	2.63E+00	na	–	1.4E+02	1.2E+02	na	–	3.62E+00	6.58E-01	na	–	9.8E+01	3.0E+01	na	–	9.8E+01	3.0E+01	na	–
Anthracene	0	–	–	na	1.1E+05	–	–	na	1.3E+06	–	–	na	1.1E+04	–	–	na	1.3E+05	–	–	na	1.3E+05
Antimony	0	–	–	na	4.3E+03	–	–	na	4.9E+04	–	–	na	4.3E+02	–	–	na	4.9E+03	–	–	na	4.9E+03
Arsenic	0	3.4E+02	1.5E+02	na	–	3.9E+02	6.3E+02	na	–	8.5E+01	3.8E+01	na	–	3.2E+02	1.6E+02	na	–	3.2E+02	1.6E+02	na	–
Barium	0	–	–	na	–	–	–	na	–	–	–	na	–	–	–	na	–	–	–	na	–
Benzene [C]	0	–	–	na	7.1E+02	–	–	na	3.7E+04	–	–	na	7.1E+01	–	–	na	3.7E+03	–	–	na	3.7E+03
Benzidine [C]	0	–	–	na	5.4E-03	–	–	na	2.8E-01	–	–	na	5.4E-04	–	–	na	2.8E-02	–	–	na	2.8E-02
Benzo (a) anthracene [C]	0	–	–	na	4.9E-01	–	–	na	2.5E+01	–	–	na	4.9E-02	–	–	na	2.5E+00	–	–	na	2.5E+00
Benzo (b) fluoranthene [C]	0	–	–	na	4.9E-01	–	–	na	2.5E+01	–	–	na	4.9E-02	–	–	na	2.5E+00	–	–	na	2.5E+00
Benzo (k) fluoranthene [C]	0	–	–	na	4.9E-01	–	–	na	2.5E+01	–	–	na	4.9E-02	–	–	na	2.5E+00	–	–	na	2.5E+00
Benzo (a) pyrene [C]	0	–	–	na	4.9E-01	–	–	na	2.5E+01	–	–	na	4.9E-02	–	–	na	2.5E+00	–	–	na	2.5E+00
Bis2-Chloroethyl Ether	0	–	–	na	1.4E+01	–	–	na	1.6E+02	–	–	na	1.4E+00	–	–	na	1.6E+01	–	–	na	1.6E+01
Bis2-Chloroisopropyl Ether	0	–	–	na	1.7E+05	–	–	na	2.0E+06	–	–	na	1.7E+04	–	–	na	2.0E+05	–	–	na	2.0E+05
Bromoform [C]	0	–	–	na	3.6E+03	–	–	na	1.9E+05	–	–	na	3.6E+02	–	–	na	1.9E+04	–	–	na	1.9E+04
Butylbenzylphthalate	0	–	–	na	5.2E+03	–	–	na	6.0E+04	–	–	na	5.2E+02	–	–	na	6.0E+03	–	–	na	6.0E+03
Cadmium	0	1.3E+01	1.8E+00	na	–	1.5E+01	7.4E+00	na	–	1.9E+00	4.4E-01	na	–	7.3E+00	1.9E+00	na	–	7.3E+00	1.9E+00	na	–
Carbon Tetrachloride [C]	0	–	–	na	4.4E+01	–	–	na	2.3E+03	–	–	na	4.4E+00	–	–	na	2.3E+02	–	–	na	2.3E+02
Chlordane [C]	0	2.4E+00	4.3E-03	na	2.2E-02	2.8E+00	1.8E-02	na	1.1E+00	6.0E-01	1.1E-03	na	2.2E-03	2.3E+00	4.5E-03	na	1.1E-01	2.3E+00	4.5E-03	na	1.1E-01
Chloride	0	8.6E+05	2.3E+05	na	–	1.0E+06	9.7E+05	na	–	2.2E+05	5.8E+04	na	–	8.2E+05	2.4E+05	na	–	8.2E+05	2.4E+05	na	–
TRC	0	1.9E+01	1.1E+01	na	–	2.2E+01	4.6E+01	na	–	4.8E+00	2.8E+00	na	–	1.8E+01	1.2E+01	na	–	1.8E+01	1.2E+01	na	–
Chlorobenzene	0	–	–	na	2.1E+04	–	–	na	2.4E+05	–	–	na	2.1E+03	–	–	na	2.4E+04	–	–	na	2.4E+04

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane [C]	0	--	--	na	3.4E+02	--	--	na	1.8E+04	--	--	na	3.4E+01	--	--	na	1.8E+03	--	--	na	1.8E+03
Chloroform [C]	0	--	--	na	2.9E+04	--	--	na	1.5E+06	--	--	na	2.9E+03	--	--	na	1.5E+05	--	--	na	1.5E+05
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	4.9E+04	--	--	na	4.3E+02	--	--	na	4.9E+03	--	--	na	4.9E+03
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	4.6E+03	--	--	na	4.0E+01	--	--	na	4.6E+02	--	--	na	4.6E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	9.6E-02	1.7E-01	na	--	2.1E-02	1.0E-02	na	--	7.9E-02	4.3E-02	na	--	**7.9E-02**	**4.3E-02**	na	--
Chromium III	0	1.4E+03	1.2E+02	na	--	1.6E+03	5.0E+02	na	--	2.3E+02	2.9E+01	na	--	8.8E+02	1.2E+02	na	--	**8.8E+02**	**1.2E+02**	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.9E+01	4.6E+01	na	--	4.0E+00	2.8E+00	na	--	1.5E+01	1.2E+01	na	--	**1.5E+01**	**1.2E+01**	na	--
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Chrysene [C]	0	--	--	na	4.9E-01	--	--	na	2.5E+01	--	--	na	4.9E-02	--	--	na	2.5E+00	--	--	na	**2.5E+00**
Copper	0	3.6E+01	1.5E+01	na	--	4.2E+01	6.1E+01	na	--	5.9E+00	3.6E+00	na	--	2.2E+01	1.5E+01	na	--	**2.2E+01**	**1.5E+01**	na	--
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	2.6E+01	2.2E+01	na	2.5E+06	5.5E+00	1.3E+00	na	2.2E+04	2.1E+01	5.5E+00	na	2.5E+05	**2.1E+01**	**5.5E+00**	na	**2.5E+05**
DDD [C]	0	--	--	na	8.4E-03	--	--	na	4.3E-01	--	--	na	8.4E-04	--	--	na	4.3E-02	--	--	na	**4.3E-02**
DDE [C]	0	--	--	na	5.9E-03	--	--	na	3.0E-01	--	--	na	5.9E-04	--	--	na	3.0E-02	--	--	na	**3.0E-02**
DDT [C]	0	1.1E+00	1.0E-03	na	5.9E-03	1.3E+00	4.2E-03	na	3.0E-01	2.8E-01	2.5E-04	na	5.9E-04	1.0E+00	1.1E-03	na	3.0E-02	**1.0E+00**	**1.1E-03**	na	**3.0E-02**
Demeton	0	--	1.0E-01	na	--	--	4.2E-01	na	--	--	2.5E-02	na	--	--	1.1E-01	na	--	--	**1.1E-01**	na	--
Dibenz(a,h)anthracene [C]	0	--	--	na	4.9E-01	--	--	na	2.5E+01	--	--	na	4.9E-02	--	--	na	2.5E+00	--	--	na	**2.5E+00**
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	1.4E+05	--	--	na	1.2E+03	--	--	na	1.4E+04	--	--	na	**1.4E+04**
Dichloromethane (Methylene Chloride) [C]	0	--	--	na	1.6E+04	--	--	na	8.2E+05	--	--	na	1.6E+03	--	--	na	8.2E+04	--	--	na	**8.2E+04**
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	2.0E+05	--	--	na	1.7E+03	--	--	na	2.0E+04	--	--	na	**2.0E+04**
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	3.0E+04	--	--	na	2.6E+02	--	--	na	3.0E+03	--	--	na	**3.0E+03**
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	3.0E+04	--	--	na	2.6E+02	--	--	na	3.0E+03	--	--	na	**3.0E+03**
3,3-Dichlorobenzidine [C]	0	--	--	na	7.7E-01	--	--	na	4.0E+01	--	--	na	7.7E-02	--	--	na	4.0E+00	--	--	na	**4.0E+00**
Dichlorobromomethane [C]	0	--	--	na	4.6E+02	--	--	na	2.4E+04	--	--	na	4.6E+01	--	--	na	2.4E+03	--	--	na	**2.4E+03**
1,2-Dichloroethane [C]	0	--	--	na	9.9E+02	--	--	na	5.1E+04	--	--	na	9.9E+01	--	--	na	5.1E+03	--	--	na	**5.1E+03**
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	2.0E+05	--	--	na	1.7E+03	--	--	na	2.0E+04	--	--	na	**2.0E+04**
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	1.6E+06	--	--	na	1.4E+04	--	--	na	1.6E+05	--	--	na	**1.6E+05**
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	9.1E+03	--	--	na	7.9E+01	--	--	na	9.1E+02	--	--	na	**9.1E+02**
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
1,2-Dichloropropane [C]	0	--	--	na	3.9E+02	--	--	na	2.0E+04	--	--	na	3.9E+01	--	--	na	2.0E+03	--	--	na	**2.0E+03**
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	2.0E+04	--	--	na	1.7E+02	--	--	na	2.0E+03	--	--	na	**2.0E+03**
Dieldrin [C]	0	2.4E-01	5.6E-02	na	1.4E-03	2.8E-01	2.4E-01	na	7.2E-02	6.0E-02	1.4E-02	na	1.4E-04	2.3E-01	5.9E-02	na	7.2E-03	**2.3E-01**	**5.9E-02**	na	**7.2E-03**
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	1.4E+06	--	--	na	1.2E+04	--	--	na	1.4E+05	--	--	na	**1.4E+05**
Di-2-Ethylhexyl Phthalate [C]	0	--	--	na	5.9E+01	--	--	na	3.0E+03	--	--	na	5.9E+00	--	--	na	3.0E+02	--	--	na	**3.0E+02**
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	2.6E+04	--	--	na	2.3E+02	--	--	na	2.6E+03	--	--	na	**2.6E+03**
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	3.3E+07	--	--	na	2.9E+05	--	--	na	3.3E+06	--	--	na	**3.3E+06**
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	1.4E+05	--	--	na	1.2E+03	--	--	na	1.4E+04	--	--	na	**1.4E+04**
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	1.6E+05	--	--	na	1.4E+03	--	--	na	1.6E+04	--	--	na	**1.6E+04**
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	8.8E+03	--	--	na	7.7E+01	--	--	na	8.8E+02	--	--	na	**8.8E+02**
2,4-Dinitrotoluene [C]	0	--	--	na	9.1E+01	--	--	na	4.7E+03	--	--	na	9.1E+00	--	--	na	4.7E+02	--	--	na	**4.7E+02**
Dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	na	1.2E-07	--	--	na	1.2E-07	--	--	na	na
1,2-Diphenylhydrazine [C]	0	--	--	na	5.4E+00	--	--	na	2.8E+02	--	--	na	5.4E-01	--	--	na	2.8E+01	--	--	na	**2.8E+01**
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.6E-01	2.4E-01	na	2.8E+03	5.5E-02	1.4E-02	na	2.4E+01	2.1E-01	5.9E-02	na	2.8E+02	**2.1E-01**	**5.9E-02**	na	**2.8E+02**
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.6E-01	2.4E-01	na	2.8E+03	5.5E-02	1.4E-02	na	2.4E+01	2.1E-01	5.9E-02	na	2.8E+02	**2.1E-01**	**5.9E-02**	na	**2.8E+02**
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	2.8E+03	--	--	na	2.4E+01	--	--	na	2.8E+02	--	--	na	**2.8E+02**
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	1.0E-01	1.5E-01	na	9.3E+00	2.2E-02	9.0E-03	na	8.1E-02	8.2E-02	3.8E-02	na	9.3E-01	**8.2E-02**	**3.8E-02**	na	**9.3E-01**
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	9.3E+00	--	--	na	8.1E-02	--	--	na	9.3E-01	--	--	na	**9.3E-01**

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	3.3E+05	--	--	na	2.9E+03	--	--	na	3.3E+04	--	--	na	3.3E+04
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	4.3E+03	--	--	na	3.7E+01	--	--	na	4.3E+02	--	--	na	4.3E+02
Fluorene	0	--	--	na	1.4E+04	--	--	na	1.6E+05	--	--	na	1.4E+03	--	--	na	1.6E+04	--	--	na	1.6E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	4.2E-02	na	--	--	2.5E-03	na	--	--	1.1E-02	na	--	--	1.1E-02	na	--
Heptachlor [C]	0	5.2E-01	3.8E-03	na	2.1E-03	6.0E-01	1.6E-02	na	1.1E-01	1.3E-01	9.5E-04	na	2.1E-04	4.9E-01	4.0E-03	na	1.1E-02	4.9E-01	4.0E-03	na	1.1E-02
Heptachlor Epoxide [C]	0	5.2E-01	3.8E-03	na	1.1E-03	6.0E-01	1.6E-02	na	5.7E-02	1.3E-01	9.5E-04	na	1.1E-04	4.9E-01	4.0E-03	na	5.7E-03	4.9E-01	4.0E-03	na	5.7E-03
Hexachlorobenzene [C]	0	--	--	na	7.7E-03	--	--	na	4.0E-01	--	--	na	7.7E-04	--	--	na	4.0E-02	--	--	na	4.0E-02
Hexachlorobutadiene [C]	0	--	--	na	5.0E+02	--	--	na	2.6E+04	--	--	na	5.0E+01	--	--	na	2.6E+03	--	--	na	2.6E+03
Hexachlorocyclohexane Alpha-BHC [C]	0	--	--	na	1.3E-01	--	--	na	6.7E+00	--	--	na	1.3E-02	--	--	na	6.7E-01	--	--	na	6.7E-01
Hexachlorocyclohexane Beta-BHC [C]	0	--	--	na	4.6E-01	--	--	na	2.4E+01	--	--	na	4.6E-02	--	--	na	2.4E+00	--	--	na	2.4E+00
Hexachlorocyclohexane Gamma-BHC [C] (Lindane)	0	9.5E-01	na	na	6.3E-01	1.1E+00	--	na	3.2E+01	2.4E-01	--	na	6.3E-02	9.0E-01	--	na	3.2E+00	9.0E-01	--	na	3.2E+00
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	2.0E+05	--	--	na	1.7E+03	--	--	na	2.0E+04	--	--	na	2.0E+04
Hexachloroethane [C]	0	--	--	na	8.9E+01	--	--	na	4.6E+03	--	--	na	8.9E+00	--	--	na	4.6E+02	--	--	na	4.6E+02
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	8.4E+00	na	--	--	5.0E-01	na	--	--	2.1E+00	na	--	--	2.1E+00	na	--
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	4.9E-01	--	--	na	2.5E+01	--	--	na	4.9E-02	--	--	na	2.5E+00	--	--	na	2.5E+00
Iron	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Isophorone [C]	0	--	--	na	2.6E+04	--	--	na	1.3E+06	--	--	na	2.6E+03	--	--	na	1.3E+05	--	--	na	1.3E+05
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--
Lead	0	4.6E+02	2.8E+01	na	--	5.3E+02	1.2E+02	na	--	6.3E+01	7.0E+00	na	--	2.4E+02	2.9E+01	na	--	2.4E+02	2.9E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	4.2E-01	na	--	--	2.5E-02	na	--	--	1.1E-01	na	--	--	1.1E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.6E+00	3.2E+00	na	5.9E-01	3.5E-01	1.9E-01	na	5.1E-03	1.3E+00	8.1E-01	na	5.9E-02	1.3E+00	8.1E-01	na	5.9E-02
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	4.6E+04	--	--	na	4.0E+02	--	--	na	4.6E+03	--	--	na	4.6E+03
Methoxychlor	0	--	3.0E-02	na	--	--	1.3E-01	na	--	--	7.5E-03	na	--	--	3.2E-02	na	--	--	3.2E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.4E+05	--	--	na	2.1E+03	--	--	na	2.4E+04	--	--	na	2.4E+04
Nickel	0	4.5E+02	3.3E+01	na	4.6E+03	5.2E+02	1.4E+02	na	5.3E+04	7.5E+01	8.2E+00	na	4.6E+02	2.9E+02	3.4E+01	na	5.3E+03	2.9E+02	3.4E+01	na	5.3E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	2.2E+04	--	--	na	1.9E+02	--	--	na	2.2E+03	--	--	na	2.2E+03
N-Nitrosodimethylamine [C]	0	--	--	na	8.1E+01	--	--	na	4.2E+03	--	--	na	8.1E+00	--	--	na	4.2E+02	--	--	na	4.2E+02
N-Nitrosodiphenylamine [C]	0	--	--	na	1.6E+02	--	--	na	8.2E+03	--	--	na	1.6E+01	--	--	na	8.2E+02	--	--	na	8.2E+02
N-Nitrosodi-n-propylamine [C]	0	--	--	na	1.4E+01	--	--	na	7.2E+02	--	--	na	1.4E+00	--	--	na	7.2E+01	--	--	na	7.2E+01
Parathion	0	6.5E-02	1.3E-02	na	--	7.5E-02	5.5E-02	na	--	1.6E-02	3.3E-03	na	--	6.2E-02	1.4E-02	na	--	6.2E-02	1.4E-02	na	--
PCB-1016	0	--	1.4E-02	na	--	--	5.9E-02	na	--	--	3.5E-03	na	--	--	1.5E-02	na	--	--	1.5E-02	na	--
PCB-1221	0	--	1.4E-02	na	--	--	5.9E-02	na	--	--	3.5E-03	na	--	--	1.5E-02	na	--	--	1.5E-02	na	--
PCB-1232	0	--	1.4E-02	na	--	--	5.9E-02	na	--	--	3.5E-03	na	--	--	1.5E-02	na	--	--	1.5E-02	na	--
PCB-1242	0	--	1.4E-02	na	--	--	5.9E-02	na	--	--	3.5E-03	na	--	--	1.5E-02	na	--	--	1.5E-02	na	--
PCB-1248	0	--	1.4E-02	na	--	--	5.9E-02	na	--	--	3.5E-03	na	--	--	1.5E-02	na	--	--	1.5E-02	na	--
PCB-1254	0	--	1.4E-02	na	--	--	5.9E-02	na	--	--	3.5E-03	na	--	--	1.5E-02	na	--	--	1.5E-02	na	--
PCB-1260	0	--	1.4E-02	na	--	--	5.9E-02	na	--	--	3.5E-03	na	--	--	1.5E-02	na	--	--	1.5E-02	na	--
PCB Total [C]	0	--	--	na	1.7E-03	--	--	na	8.8E-02	--	--	na	1.7E-04	--	--	na	8.8E-03	--	--	na	8.8E-03

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol [C]	0	7.7E-03	5.9E-03	na	8.2E+01	8.9E-03	2.5E-02	na	4.2E+03	1.9E-03	1.5E-03	na	8.2E+00	7.3E-03	6.2E-03	na	4.2E+02	7.3E-03	6.2E-03	na	4.2E+02
Phenol	0	--	--	na	4.6E+06	--	--	na	5.3E+07	--	--	na	4.6E+05	--	--	na	5.3E+06	--	--	na	5.3E+06
Pyrene	0	--	--	na	1.1E+04	--	--	na	1.3E+05	--	--	na	1.1E+03	--	--	na	1.3E+04	--	--	na	1.3E+04
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Gross Alpha Activity	0	--	--	na	1.5E+01	--	--	na	1.7E+02	--	--	na	1.5E+00	--	--	na	1.7E+01	--	--	na	1.7E+01
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	4.6E+01	--	--	na	4.0E-01	--	--	na	4.6E+00	--	--	na	4.6E+00
Strontium-90	0	--	--	na	8.0E+00	--	--	na	9.2E+01	--	--	na	8.0E-01	--	--	na	9.2E+00	--	--	na	9.2E+00
Tritium	0	--	--	na	2.0E+04	--	--	na	2.3E+05	--	--	na	2.0E+03	--	--	na	2.3E+04	--	--	na	2.3E+04
Selenium	0	2.0E+01	5.0E+00	na	1.1E+04	2.3E+01	2.1E+01	na	1.3E+05	5.0E+00	1.3E+00	na	1.1E+03	1.9E+01	5.3E+00	na	1.3E+04	1.9E+01	5.3E+00	na	1.3E+04
Silver	0	2.1E+01	--	na	--	2.5E+01	--	na	--	2.4E+00	--	na	--	9.1E+00	--	na	--	9.1E+00	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
1,1,2,2-Tetrachloroethane [C]	0	--	--	na	1.1E+02	--	--	na	5.7E+03	--	--	na	1.1E+01	--	--	na	5.7E+02	--	--	na	5.7E+02
Tetrachloroethylene [C]	0	--	--	na	8.9E+01	--	--	na	4.6E+03	--	--	na	8.9E+00	--	--	na	4.6E+02	--	--	na	4.6E+02
Thallium	0	--	--	na	6.3E+00	--	--	na	7.2E+01	--	--	na	6.3E-01	--	--	na	7.2E+00	--	--	na	7.2E+00
Toluene	0	--	--	na	2.0E+05	--	--	na	2.3E+06	--	--	na	2.0E+04	--	--	na	2.3E+05	--	--	na	2.3E+05
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Toxaphene [C]	0	7.3E-01	2.0E-04	na	7.5E-03	8.5E-01	8.4E-04	na	3.9E-01	1.8E-01	5.0E-05	na	7.5E-04	6.9E-01	2.1E-04	na	3.9E-02	6.9E-01	2.1E-04	na	3.9E-02
Tributyltin	0	4.6E-01	6.3E-02	na	--	5.3E-01	2.6E-01	na	--	1.2E-01	1.6E-02	na	--	4.4E-01	6.6E-02	na	--	4.4E-01	6.6E-02	na	--
1,2,4-Trichlorobenzene	0	--	--	na	9.4E+02	--	--	na	1.1E+04	--	--	na	9.4E+01	--	--	na	1.1E+03	--	--	na	1.1E+03
1,1,2-Trichloroethane [C]	0	--	--	na	4.2E+02	--	--	na	2.2E+04	--	--	na	4.2E+01	--	--	na	2.2E+03	--	--	na	2.2E+03
Trichloroethylene [C]	0	--	--	na	8.1E+02	--	--	na	4.2E+04	--	--	na	8.1E+01	--	--	na	4.2E+03	--	--	na	4.2E+03
2,4,6-Trichlorophenol [C]	0	--	--	na	6.5E+01	--	--	na	3.3E+03	--	--	na	6.5E+00	--	--	na	3.3E+02	--	--	na	3.3E+02
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Vinyl Chloride [C]	0	--	--	na	6.1E+01	--	--	na	3.1E+03	--	--	na	6.1E+00	--	--	na	3.1E+02	--	--	na	3.1E+02
Zinc	0	2.9E+02	1.9E+02	na	6.9E+04	3.3E+02	8.0E+02	na	7.9E+05	4.8E+01	4.8E+01	na	6.9E+03	1.8E+02	2.0E+02	na	7.9E+04	1.8E+02	2.0E+02	na	7.9E+04

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens,
   Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	4.9E+03
Arsenic	9.5E+01
Barium	na
Cadmium	1.1E+00
Chromium III	7.4E+01
Chromium VI	6.1E+00
Copper	8.9E+00
Iron	na
Lead	1.8E+01
Manganese	na
Mercury	5.9E-02
Nickel	2.1E+01
Selenium	3.2E+00
Silver	3.6E+00
Zinc	7.4E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Remington WWTP - 2.5 MGD Permit No.: VA0076805

Receiving Stream: Rappahannock River Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	134	mg/L
90% Temperature (Annual) =	23.1	deg C
90% Temperature (Wet season) =	19.8	deg C
90% Maximum pH =	7.69	SU
10% Maximum pH =		SU
Tier Designation (1 or 2) =	2	
Public Water Supply (PWS) Y/N? =	n	
Trout Present Y/N? =	n	
Early Life Stages Present Y/N? =	y	

Stream Flows

1Q10 (Annual) =	5.6	MGD
7Q10 (Annual) =	6.4	MGD
30Q10 (Annual) =	12	MGD
1Q10 (Wet season) =	52	MGD
30Q10 (Wet season)	89	MGD
30Q5 =	21	MGD
Harmonic Mean =	101	MGD
Annual Average =	N/A	MGD

Mixing Information

Annual - 1Q10 Mix =	6.09	%
- 7Q10 Mix =	100	%
- 30Q10 Mix =	100	%
Wet Season - 1Q10 Mix =	35.7	%
- 30Q10 Mix =	100	%

Effluent Information

Mean Hardness (as CaCO3) =	312	mg/L
90% Temp (Annual) =		deg C
90% Temp (Wet season) =		deg C
90% Maximum pH =	8.04	SU
10% Maximum pH =		SU
Discharge Flow =	2.5	MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	--	--	na	2.7E+03	--	--	na	2.5E+04	--	--	na	2.7E+02	--	--	na	2.5E+03	--	--	na	**2.5E+03**
Acrolein	0	--	--	na	7.8E+02	--	--	na	7.3E+03	--	--	na	7.8E+01	--	--	na	7.3E+02	--	--	na	**7.3E+02**
Acrylonitrile[C]	0	--	--	na	6.6E+00	--	--	na	2.7E+02	--	--	na	6.6E-01	--	--	na	2.7E+01	--	--	na	**2.7E+01**
Aldrin [C]	0	3.0E+00	--	na	1.4E-03	3.4E+00	--	na	5.8E-02	7.5E-01	--	na	1.4E-04	2.4E+00	--	na	5.8E-03	**2.4E+00**	--	na	**5.8E-03**
Ammonia-N (mg/l) (Yearly)	0	8.73E+00	2.56E+00	na	--	9.9E+00	1.5E+01	na	--	3.19E+00	6.40E-01	na	--	1.0E+01	3.7E+00	na	--	**9.9E+00**	**3.7E+00**	na	--
Ammonia-N (mg/l) (High Flow)	0	1.40E+01	2.65E+00	na	--	1.2E+02	9.7E+01	na	--	3.60E+00	6.62E-01	na	--	7.9E+01	2.4E+01	na	--	**7.9E+01**	**2.4E+01**	na	--
Anthracene	0	--	--	na	1.1E+05	--	--	na	1.0E+06	--	--	na	1.1E+04	--	--	na	1.0E+05	--	--	na	**1.0E+05**
Antimony	0	--	--	na	4.3E+03	--	--	na	4.0E+04	--	--	na	4.3E+02	--	--	na	4.0E+03	--	--	na	**4.0E+03**
Arsenic	0	3.4E+02	1.5E+02	na	--	3.9E+02	5.3E+02	na	--	8.5E+01	3.8E+01	na	--	2.8E+02	1.3E+02	na	--	**2.8E+02**	**1.3E+02**	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Benzene [C]	0	--	--	na	7.1E+02	--	--	na	2.9E+04	--	--	na	7.1E+01	--	--	na	2.9E+03	--	--	na	**2.9E+03**
Benzidine[C]	0	--	--	na	5.4E-03	--	--	na	2.2E-01	--	--	na	5.4E-04	--	--	na	2.2E-02	--	--	na	**2.2E-02**
Benzo (a) anthracene [C]	0	--	--	na	4.9E-01	--	--	na	2.0E+01	--	--	na	4.9E-02	--	--	na	2.0E+00	--	--	na	**2.0E+00**
Benzo (b) fluoranthene [C]	0	--	--	na	4.9E-01	--	--	na	2.0E+01	--	--	na	4.9E-02	--	--	na	2.0E+00	--	--	na	**2.0E+00**
Benzo (k) fluoranthene [C]	0	--	--	na	4.9E-01	--	--	na	2.0E+01	--	--	na	4.9E-02	--	--	na	2.0E+00	--	--	na	**2.0E+00**
Benzo (a) pyrene [C]	0	--	--	na	4.9E-01	--	--	na	2.0E+01	--	--	na	4.9E-02	--	--	na	2.0E+00	--	--	na	**2.0E+00**
Bis2-Chloroethyl Ether	0	--	--	na	1.4E+01	--	--	na	1.3E+02	--	--	na	1.4E+00	--	--	na	1.3E+01	--	--	na	**1.3E+01**
Bis2-Chloroisopropyl Ether	0	--	--	na	1.7E+05	--	--	na	1.6E+06	--	--	na	1.7E+04	--	--	na	1.6E+05	--	--	na	**1.6E+05**
Bromoform [C]	0	--	--	na	3.6E+03	--	--	na	1.5E+05	--	--	na	3.6E+02	--	--	na	1.5E+04	--	--	na	**1.5E+04**
Butylbenzylphthalate	0	--	--	na	5.2E+03	--	--	na	4.9E+04	--	--	na	5.2E+02	--	--	na	4.9E+03	--	--	na	**4.9E+03**
Cadmium	0	1.3E+01	1.8E+00	na	--	1.5E+01	6.5E+00	na	--	2.0E+00	4.6E-01	na	--	6.5E+00	1.6E+00	na	--	**6.5E+00**	**1.6E+00**	na	--
Carbon Tetrachloride [C]	0	--	--	na	4.4E+01	--	--	na	1.8E+03	--	--	na	4.4E+00	--	--	na	1.8E+02	--	--	na	**1.8E+02**
Chlordane [C]	0	2.4E+00	4.3E-03	na	2.2E-02	2.7E+00	1.5E-02	na	9.1E-01	6.0E-01	1.1E-03	na	2.2E-03	1.9E+00	3.8E-03	na	9.1E-02	**1.9E+00**	**3.8E-03**	na	**9.1E-02**
Chloride	0	8.6E+05	2.3E+05	na	--	9.8E+05	8.2E+05	na	--	2.2E+05	5.8E+04	na	--	7.0E+05	2.0E+05	na	--	**7.0E+05**	**2.0E+05**	na	--
TRC	0	1.9E+01	1.1E+01	na	--	2.2E+01	3.9E+01	na	--	4.8E+00	2.8E+00	na	--	1.5E+01	9.8E+00	na	--	**1.5E+01**	**9.8E+00**	na	--
Chlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.0E+05	--	--	na	2.1E+03	--	--	na	2.0E+04	--	--	na	**2.0E+04**

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane [C]	0	--	--	na	3.4E+02	--	--	na	1.4E+04	--	--	na	3.4E+01	--	--	na	1.4E+03	--	--	na	1.4E+03
Chloroform [C]	0	--	--	na	2.9E+04	--	--	na	1.2E+06	--	--	na	2.9E+03	--	--	na	1.2E+05	--	--	na	1.2E+05
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	4.0E+04	--	--	na	4.3E+02	--	--	na	4.0E+03	--	--	na	4.0E+03
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	3.8E+03	--	--	na	4.0E+01	--	--	na	3.8E+02	--	--	na	3.8E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	9.4E-02	1.5E-01	na	--	2.1E-02	1.0E-02	na	--	6.7E-02	3.6E-02	na	--	6.7E-02	3.6E-02	na	--
Chromium III	0	1.4E+03	1.2E+02	na	--	1.6E+03	4.3E+02	na	--	2.4E+02	3.1E+01	na	--	7.8E+02	1.1E+02	na	--	7.8E+02	1.1E+02	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.8E+01	3.9E+01	na	--	4.0E+00	2.8E+00	na	--	1.3E+01	9.8E+00	na	--	1.3E+01	9.8E+00	na	--
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Chrysene [C]	0	--	--	na	4.9E-01	--	--	na	2.0E+01	--	--	na	4.9E-02	--	--	na	2.0E+00	--	--	na	2.0E+00
Copper	0	3.7E+01	1.5E+01	na	--	4.2E+01	5.4E+01	na	--	6.1E+00	3.8E+00	na	--	2.0E+01	1.3E+01	na	--	2.0E+01	1.3E+01	na	--
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	2.5E+01	1.9E+01	na	2.0E+06	5.5E+00	1.3E+00	na	2.2E+04	1.8E+01	4.6E+00	na	2.0E+05	1.8E+01	4.6E+00	na	2.0E+05
DDD [C]	0	--	--	na	8.4E-03	--	--	na	3.5E-01	--	--	na	8.4E-04	--	--	na	3.5E-02	--	--	na	3.5E-02
DDE [C]	0	--	--	na	5.9E-03	--	--	na	2.4E-01	--	--	na	5.9E-04	--	--	na	2.4E-02	--	--	na	2.4E-02
DDT [C]	0	1.1E+00	1.0E-03	na	5.9E-03	1.3E+00	3.6E-03	na	2.4E-01	2.8E-01	2.5E-04	na	5.9E-04	8.9E-01	8.9E-04	na	2.4E-02	8.9E-01	8.9E-04	na	2.4E-02
Demeton	0	--	1.0E-01	na	--	--	3.6E-01	na	--	--	2.5E-02	na	--	--	8.9E-02	na	--	--	8.9E-02	na	--
Dibenz(a,h)anthracene [C]	0	--	--	na	4.9E-01	--	--	na	2.0E+01	--	--	na	4.9E-02	--	--	na	2.0E+00	--	--	na	2.0E+00
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	1.1E+05	--	--	na	1.2E+03	--	--	na	1.1E+04	--	--	na	1.1E+04
Dichloromethane (Methylene Chloride) [C]	0	--	--	na	1.6E+04	--	--	na	6.6E+05	--	--	na	1.6E+03	--	--	na	6.6E+04	--	--	na	6.6E+04
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	1.6E+05	--	--	na	1.7E+03	--	--	na	1.6E+04	--	--	na	1.6E+04
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.4E+04	--	--	na	2.6E+02	--	--	na	2.4E+03	--	--	na	2.4E+03
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.4E+04	--	--	na	2.6E+02	--	--	na	2.4E+03	--	--	na	2.4E+03
3,3-Dichlorobenzidine [C]	0	--	--	na	7.7E-01	--	--	na	3.2E+01	--	--	na	7.7E-02	--	--	na	3.2E+00	--	--	na	3.2E+00
Dichlorobromomethane [C]	0	--	--	na	4.6E+02	--	--	na	1.9E+04	--	--	na	4.6E+01	--	--	na	1.9E+03	--	--	na	1.9E+03
1,2-Dichloroethane [C]	0	--	--	na	9.9E+02	--	--	na	4.1E+04	--	--	na	9.9E+01	--	--	na	4.1E+03	--	--	na	4.1E+03
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	1.6E+05	--	--	na	1.7E+03	--	--	na	1.6E+04	--	--	na	1.6E+04
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	1.3E+06	--	--	na	1.4E+04	--	--	na	1.3E+05	--	--	na	1.3E+05
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	7.4E+03	--	--	na	7.9E+01	--	--	na	7.4E+02	--	--	na	7.4E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
1,2-Dichloropropane [C]	0	--	--	na	3.9E+02	--	--	na	1.6E+04	--	--	na	3.9E+01	--	--	na	1.6E+03	--	--	na	1.6E+03
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	1.6E+04	--	--	na	1.7E+02	--	--	na	1.6E+03	--	--	na	1.6E+03
Dieldrin [C]	0	2.4E-01	5.6E-02	na	1.4E-03	2.7E-01	2.0E-01	na	5.8E-02	6.0E-02	1.4E-02	na	1.4E-04	1.9E-01	5.0E-02	na	5.8E-03	1.9E-01	5.0E-02	na	5.8E-03
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	1.1E+06	--	--	na	1.2E+04	--	--	na	1.1E+05	--	--	na	1.1E+05
Di-2-Ethylhexyl Phthalate [C]	0	--	--	na	5.9E+01	--	--	na	2.4E+03	--	--	na	5.9E+00	--	--	na	2.4E+02	--	--	na	2.4E+02
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	2.2E+04	--	--	na	2.3E+02	--	--	na	2.2E+03	--	--	na	2.2E+03
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	2.7E+07	--	--	na	2.9E+05	--	--	na	2.7E+06	--	--	na	2.7E+06
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	1.1E+05	--	--	na	1.2E+03	--	--	na	1.1E+04	--	--	na	1.1E+04
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	1.3E+05	--	--	na	1.4E+03	--	--	na	1.3E+04	--	--	na	1.3E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	7.2E+03	--	--	na	7.7E+01	--	--	na	7.2E+02	--	--	na	7.2E+02
2,4-Dinitrotoluene [C]	0	--	--	na	9.1E+01	--	--	na	3.8E+03	--	--	na	9.1E+00	--	--	na	3.8E+02	--	--	na	3.8E+02
Dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	na	1.2E-07	--	--	na	1.2E-07	--	--	na	na
1,2-Diphenylhydrazine [C]	0	--	--	na	5.4E+00	--	--	na	2.2E+02	--	--	na	5.4E-01	--	--	na	2.2E+01	--	--	na	2.2E+01
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.5E-01	2.0E-01	na	2.3E+03	5.5E-02	1.4E-02	na	2.4E+01	1.8E-01	5.0E-02	na	2.3E+02	1.8E-01	5.0E-02	na	2.3E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.5E-01	2.0E-01	na	2.3E+03	5.5E-02	1.4E-02	na	2.4E+01	1.8E-01	5.0E-02	na	2.3E+02	1.8E-01	5.0E-02	na	2.3E+02
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	2.3E+03	--	--	na	2.4E+01	--	--	na	2.3E+02	--	--	na	2.3E+02
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	9.8E-02	1.3E-01	na	7.6E+00	2.2E-02	9.0E-03	na	8.1E-02	7.0E-02	3.2E-02	na	7.6E-01	7.0E-02	3.2E-02	na	7.6E-01
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	7.6E+00	--	--	na	8.1E-02	--	--	na	7.6E-01	--	--	na	7.6E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	2.7E+05	--	--	na	2.9E+03	--	--	na	2.7E+04	--	--	na	**2.7E+04**
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	3.5E+03	--	--	na	3.7E+01	--	--	na	3.5E+02	--	--	na	**3.5E+02**
Fluorene	0	--	--	na	1.4E+04	--	--	na	1.3E+05	--	--	na	1.4E+03	--	--	na	1.3E+04	--	--	na	**1.3E+04**
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	3.6E-02	na	--	--	2.5E-03	na	--	--	8.9E-03	na	--	--	**8.9E-03**	na	--
Heptachlor [C]	0	5.2E-01	3.8E-03	na	2.1E-03	5.9E-01	1.4E-02	na	8.7E-02	1.3E-01	9.5E-04	na	2.1E-04	4.2E-01	3.4E-03	na	8.7E-03	**4.2E-01**	**3.4E-03**	na	**8.7E-03**
Heptachlor Epoxide[C]	0	5.2E-01	3.8E-03	na	1.1E-03	5.9E-01	1.4E-02	na	4.6E-02	1.3E-01	9.5E-04	na	1.1E-04	4.2E-01	3.4E-03	na	4.6E-03	**4.2E-01**	**3.4E-03**	na	**4.6E-03**
Hexachlorobenzene[C]	0	--	--	na	7.7E-03	--	--	na	3.2E-01	--	--	na	7.7E-04	--	--	na	3.2E-02	--	--	na	**3.2E-02**
Hexachlorobutadiene[C]	0	--	--	na	5.0E+02	--	--	na	2.1E+04	--	--	na	5.0E+01	--	--	na	2.1E+03	--	--	na	**2.1E+03**
Hexachlorocyclohexane Alpha-BHC[C]	0	--	--	na	1.3E-01	--	--	na	5.4E+00	--	--	na	1.3E-02	--	--	na	5.4E-01	--	--	na	**5.4E-01**
Hexachlorocyclohexane Beta-BHC[C]	0	--	--	na	4.6E-01	--	--	na	1.9E+01	--	--	na	4.6E-02	--	--	na	1.9E+00	--	--	na	**1.9E+00**
Hexachlorocyclohexane Gamma-BHC[C] (Lindane)	0	9.5E-01	na	na	6.3E-01	1.1E+00	--	na	2.6E+01	2.4E-01	--	na	6.3E-02	7.7E-01	--	na	2.6E+00	**7.7E-01**	--	na	**2.6E+00**
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	1.6E+05	--	--	na	1.7E+03	--	--	na	1.6E+04	--	--	na	**1.6E+04**
Hexachloroethane[C]	0	--	--	na	8.9E+01	--	--	na	3.7E+03	--	--	na	8.9E+00	--	--	na	3.7E+02	--	--	na	**3.7E+02**
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	7.1E+00	na	--	--	5.0E-01	na	--	--	1.8E+00	na	--	--	**1.8E+00**	na	--
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	4.9E-01	--	--	na	2.0E+01	--	--	na	4.9E-02	--	--	na	2.0E+00	--	--	na	**2.0E+00**
Iron	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Isophorone[C]	0	--	--	na	2.6E+04	--	--	na	1.1E+06	--	--	na	2.6E+03	--	--	na	1.1E+05	--	--	na	**1.1E+05**
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	**0.0E+00**	na	--
Lead	0	4.6E+02	2.9E+01	na	--	5.3E+02	1.0E+02	na	--	6.7E+01	7.3E+00	na	--	2.2E+02	2.6E+01	na	--	**2.2E+02**	**2.6E+01**	na	--
Malathion	0	--	1.0E-01	na	--	--	3.6E-01	na	--	--	2.5E-02	na	--	--	8.9E-02	na	--	--	**8.9E-02**	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.6E+00	2.7E+00	na	4.8E-01	3.5E-01	1.9E-01	na	5.1E-03	1.1E+00	6.9E-01	na	4.8E-02	**1.1E+00**	**6.9E-01**	na	**4.8E-02**
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	3.8E+04	--	--	na	4.0E+02	--	--	na	3.8E+03	--	--	na	**3.8E+03**
Methoxychlor	0	--	3.0E-02	na	--	--	1.1E-01	na	--	--	7.5E-03	na	--	--	2.7E-02	na	--	--	**2.7E-02**	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	**0.0E+00**	na	--
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.0E+05	--	--	na	2.1E+03	--	--	na	2.0E+04	--	--	na	**2.0E+04**
Nickel	0	4.5E+02	3.4E+01	na	4.6E+03	5.1E+02	1.2E+02	na	4.3E+04	7.8E+01	8.5E+00	na	4.6E+02	2.5E+02	3.0E+01	na	4.3E+03	**2.5E+02**	**3.0E+01**	na	**4.3E+03**
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	1.8E+04	--	--	na	1.9E+02	--	--	na	1.8E+03	--	--	na	**1.8E+03**
N-Nitrosodimethylamine[C]	0	--	--	na	8.1E+01	--	--	na	3.4E+03	--	--	na	8.1E+00	--	--	na	3.4E+02	--	--	na	**3.4E+02**
N-Nitrosodiphenylamine[C]	0	--	--	na	1.6E+02	--	--	na	6.6E+03	--	--	na	1.6E+01	--	--	na	6.6E+02	--	--	na	**6.6E+02**
N-Nitrosodi-n-propylamine[C]	0	--	--	na	1.4E+01	--	--	na	5.8E+02	--	--	na	1.4E+00	--	--	na	5.8E+01	--	--	na	**5.8E+01**
Parathion	0	6.5E-02	1.3E-02	na	--	7.4E-02	4.6E-02	na	--	1.6E-02	3.3E-03	na	--	5.3E-02	1.2E-02	na	--	**5.3E-02**	**1.2E-02**	na	--
PCB-1016	0	--	1.4E-02	na	--	--	5.0E-02	na	--	--	3.5E-03	na	--	--	1.2E-02	na	--	--	**1.2E-02**	na	--
PCB-1221	0	--	1.4E-02	na	--	--	5.0E-02	na	--	--	3.5E-03	na	--	--	1.2E-02	na	--	--	**1.2E-02**	na	--
PCB-1232	0	--	1.4E-02	na	--	--	5.0E-02	na	--	--	3.5E-03	na	--	--	1.2E-02	na	--	--	**1.2E-02**	na	--
PCB-1242	0	--	1.4E-02	na	--	--	5.0E-02	na	--	--	3.5E-03	na	--	--	1.2E-02	na	--	--	**1.2E-02**	na	--
PCB-1248	0	--	1.4E-02	na	--	--	5.0E-02	na	--	--	3.5E-03	na	--	--	1.2E-02	na	--	--	**1.2E-02**	na	--
PCB-1254	0	--	1.4E-02	na	--	--	5.0E-02	na	--	--	3.5E-03	na	--	--	1.2E-02	na	--	--	**1.2E-02**	na	--
PCB-1260	0	--	1.4E-02	na	--	--	5.0E-02	na	--	--	3.5E-03	na	--	--	1.2E-02	na	--	--	**1.2E-02**	na	--
PCB Total[C]	0	--	--	na	1.7E-03	--	--	na	7.0E-02	--	--	na	1.7E-04	--	--	na	7.0E-03	--	--	na	**7.0E-03**

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol [C]	0	7.7E-03	5.9E-03	na	8.2E+01	6.7E-03	2.1E-02	na	3.4E+03	1.9E-03	1.5E-03	na	8.2E+00	6.2E-03	5.2E-03	na	3.4E+02	**6.2E-03**	**5.2E-03**	na	**3.4E+02**
Phenol	0	--	--	na	4.6E+06	--	--	na	4.3E+07	--	--	na	4.6E+05	--	--	na	4.3E+06	--	--	na	**4.3E+06**
Pyrene	0	--	--	na	1.1E+04	--	--	na	1.0E+05	--	--	na	1.1E+03	--	--	na	1.0E+04	--	--	na	**1.0E+04**
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Gross Alpha Activity	0	--	--	na	1.5E+01	--	--	na	1.4E+02	--	--	na	1.5E+00	--	--	na	1.4E+01	--	--	na	**1.4E+01**
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	3.8E+01	--	--	na	4.0E-01	--	--	na	3.8E+00	--	--	na	**3.8E+00**
Strontium-90	0	--	--	na	8.0E+00	--	--	na	7.5E+01	--	--	na	8.0E-01	--	--	na	7.5E+00	--	--	na	**7.5E+00**
Tritium	0	--	--	na	2.0E+04	--	--	na	1.9E+05	--	--	na	2.0E+03	--	--	na	1.9E+04	--	--	na	**1.9E+04**
Selenium	0	2.0E+01	5.0E+00	na	1.1E+04	2.3E+01	1.8E+01	na	1.0E+05	5.0E+00	1.3E+00	na	1.1E+03	1.6E+01	4.5E+00	na	1.0E+04	**1.6E+01**	**4.5E+00**	na	**1.0E+04**
Silver	0	2.2E+01	--	na	--	2.5E+01	--	na	--	2.6E+00	--	na	--	8.3E+00	--	na	--	**8.3E+00**	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
1,1,2,2-Tetrachloroethane [C]	0	--	--	na	1.1E+02	--	--	na	4.6E+03	--	--	na	1.1E+01	--	--	na	4.6E+02	--	--	na	**4.6E+02**
Tetrachloroethylene [C]	0	--	--	na	8.9E+01	--	--	na	3.7E+03	--	--	na	8.9E+00	--	--	na	3.7E+02	--	--	na	**3.7E+02**
Thallium	0	--	--	na	6.3E+00	--	--	na	5.9E+01	--	--	na	6.3E-01	--	--	na	5.9E+00	--	--	na	**5.9E+00**
Toluene	0	--	--	na	2.0E+05	--	--	na	1.9E+06	--	--	na	2.0E+04	--	--	na	1.9E+05	--	--	na	**1.9E+05**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Toxaphene [C]	0	7.3E-01	2.0E-04	na	7.5E-03	8.3E-01	7.1E-04	na	3.1E-01	1.8E-01	5.0E-05	na	7.5E-04	5.9E-01	1.8E-04	na	3.1E-02	**5.9E-01**	**1.8E-04**	na	**3.1E-02**
Tributyltin	0	4.6E-01	6.3E-02	na	--	5.2E-01	2.2E-01	na	--	1.2E-01	1.6E-02	na	--	3.7E-01	5.6E-02	na	--	**3.7E-01**	**5.6E-02**	na	--
1,2,4-Trichlorobenzene	0	--	--	na	9.4E+02	--	--	na	8.8E+03	--	--	na	9.4E+01	--	--	na	8.8E+02	--	--	na	**8.8E+02**
1,1,2-Trichloroethane [C]	0	--	--	na	4.2E+02	--	--	na	1.7E+04	--	--	na	4.2E+01	--	--	na	1.7E+03	--	--	na	**1.7E+03**
Trichloroethylene [C]	0	--	--	na	8.1E+02	--	--	na	3.4E+04	--	--	na	8.1E+01	--	--	na	3.4E+03	--	--	na	**3.4E+03**
2,4,6-Trichlorophenol [C]	0	--	--	na	6.5E+01	--	--	na	2.7E+03	--	--	na	6.5E+00	--	--	na	2.7E+02	--	--	na	**2.7E+02**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Vinyl Chloride [C]	0	--	--	na	6.1E+01	--	--	na	2.5E+03	--	--	na	6.1E+00	--	--	na	2.5E+02	--	--	na	**2.5E+02**
Zinc	0	2.9E+02	2.0E+02	na	6.9E+04	3.3E+02	7.1E+02	na	6.5E+05	5.0E+01	5.0E+01	ns	6.9E+03	1.6E+02	1.8E+02	na	6.5E+04	**1.6E+02**	**1.8E+02**	na	**6.5E+04**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	4.0E+03
Arsenic	8.0E+01
Barium	na
Cadmium	9.8E-01
Chromium III	6.5E+01
Chromium VI	5.2E+00
Copper	7.9E+00
Iron	na
Lead	1.6E+01
Manganese	na
Mercury	4.8E-02
Nickel	1.8E+01
Selenium	2.7E+00
Silver	3.3E+00
Zinc	6.5E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Mixing Zone Predictions for Remington WWTP (Annual)

Effluent Flow = 2.0 MGD
Stream 7Q10 = 6.4 MGD
Stream 30Q10 = 12 MGD
Stream 1Q10 = 5.6 MGD
Stream slope = 0.001 ft/ft
Stream width = 75 ft
Bottom scale = 1
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .3635 ft
Length = 27284.27 ft
Velocity = .4769 ft/sec
Residence Time = .6621 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = .4944 ft
Length = 21070.55 ft
Velocity = .5842 ft/sec
Residence Time = .4174 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .3423 ft
Length = 28699.95 ft
Velocity = .4583 ft/sec
Residence Time = 17.3948 hours

Recommendation:

A complete mix assumption is appropriate for this situation providing no more than 5.75% of the 1Q10 is used.

Mixing Zone Predictions for Remington WWTP (Annual)

Effluent Flow = 2.5 MGD
Stream 7Q10 = 6.4 MGD
Stream 30Q10 = 12 MGD
Stream 1Q10 = 5.6 MGD
Stream slope = 0.001 ft/ft
Stream width = 75 ft
Bottom scale = 1
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .3764 ft
Length = 26496.88 ft
Velocity = .488 ft/sec
Residence Time = .6284 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = .5052 ft
Length = 20688.64 ft
Velocity = .5924 ft/sec
Residence Time = .4042 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .3556 ft
Length = 27790.16 ft
Velocity = .4701 ft/sec
Residence Time = 16.4218 hours

Recommendation:

A complete mix assumption is appropriate for this situation providing no more than 6.09% of the 1Q10 is used.

4/10/2007 10:33:02 AM

Facility = Remington WWTP - 2.0 MGG
Chemical = Total Zinc
Chronic averaging period = 30
WLAa = 180
WLAc = 200
Q.L. = 55
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 7
Expected Value = 71.7387
Variance = 1852.72
C.V. = 0.6
97th percentile daily values = 174.570
97th percentile 4 day average = 119.358
97th percentile 30 day average= 86.5208
< Q.L. = 3
Model used = BPJ Assumptions, Type 1 data

No Limit is required for this material

The data are:

50400
44000
30500
54.3
0
62
0

4/10/2007 10:34:00 AM

Facility = Remington WWTP - 2.5 MGD
Chemical = Total Zinc
Chronic averaging period = 30
WLAa = 160
WLAc = 180
Q.L. = 55
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 7
Expected Value = 71.7387
Variance = 1852.72
C.V. = 0.6
97th percentile daily values = 174.570
97th percentile 4 day average = 119.358
97th percentile 30 day average= 86.5208
< Q.L. = 3
Model used = BPJ Assumptions, Type 1 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 160
Average Weekly limit = 160
Average Monthly LImit = 160

The data are:

50400
44000
30500
54.3
0
62
0

M E M O R A N D U M

VIRGINIA STATE WATER CONTROL BOARD
Office of Water Resources Management
P.O. Box 11143
2111 N. Hamilton Street Richmond, Virginia 23230

Subject: Remington Regional STP
To: Fred T. Holt
From: M. Dale Phillips
Date: March 3, 1980
Copies: Joan Foundos, NRO

I have found the old model that Joan used in 1987 for the analysis of the Remington discharge for a flow of 0.73 MGD. I have run that model for the new flow of 2.0 MGD and attach the runs. The only thing that I changed was the flow from the STP.

According to this work the following limits would apply:

Flow = 2.0 MGD
CBOD5 = 20 mg/l
TKN = 3.0 mg/l
D.O. = 6.5 mg/l

The result is in accordance with Joan's original definition of antidegradation e.g. a drop in D.O. of < 0.5 mg/l.

The 3.0 mg/l TKN is assumed to be refractory organic nitrogen compounds and is in accordance with both our past and present methods.

FOR THE DISCHARGE AT THE BEGINNING OF THE SEGMENT:

FLOW = 0 MGD D.O. = 7.0 MG/L CBOD = 0 MG/L NBOD = 0 MG/L

THE RESULTS FOR SECTION 2 ARE

DISTANCE (MI) FROM HEAD OF SEGMENT	TOTAL DISTANCE (MI) FROM BEGINNING	D.O. (MG/L)	CBOD (MG/L)	NBOD (MG/L)
0	2.8	6.463281	12.33873	0
.5	3.3	6.86	12.09115	0
1	3.8	6.88	11.84853	0

****

SIMULATION COMPLETED

THE DATA FILE IS PRINTED BELOW FOR YOUR CONVENIENCE

```
2000 DATA "Remington"
2010 DATA "Rappahannock River"
2020 DATA 2.75,.5
2030 DATA 7.01,3.5,0,5.83
2035 REM     DATA FOR SEGMENT 1
2040 DATA 2.0,50,0,6.5
2050 DATA 2.5,.21,0
2060 DATA 2.8,8.2,30,250
2070 DATA 0,0,0
2075 REM     DATA FOR SEGMENT 2
2080 DATA 0,0,0,0
2090 DATA 15,.21,0
2100 DATA 1,8.2,30,260
2110 DATA 0,0,0
```

effluent = 2.0 MG
20 mg/L CBOD
3 mg/L TKN

MODEL SIMULATION FOR THE Remington DISCHARGE TO Rappahannock River

6.5 mg/L DO

==========

THE BACKGROUND CONDITIONS ARE:

FLOW = 7.01 MGD D.O. = 6.88 MG/L CBOD = 3.5 MG/L NBOD= 0 MG/L

OUTPUT WILL BE GENERATED EVERY .5 MILE FROM THE BEGINNING OF A SEGMENT

****

THE VARIABLES FOR SECTION 1 ARE:

The k rates shown are at 20 degrees C. The model corrects them.

Ka = 2.5 /DAY Kr = .21 /DAY Kn = 0 /DAY SATURATION D.O. = 7.64975 MG/L

LENGTH = 2.8 MI VELOCITY = 8.2 MI/D TEMP. = 30 C ELEV. = 260

P = 0 MG/L/D R = 0 MG/L/D BENTHIC DEMAND = 0 MG/L/D

FOR THE DISCHARGE AT THE BEGINNING OF THE SEGMENT:

FLOW = 2 MGD D.O. = 6.5 MG/L CBOD = 50 MG/L NBOD = 0 MG/L

CBOD 50 = CBOD of 20 mg/L

THE RESULTS FOR SECTION 1 ARE

DISTANCE (MI) FROM HEAD OF SEGMENT	TOTAL DISTANCE (MI) FROM BEGINNING	D.O. (MG/L)	CBOD (MG/L)	NBOD (MG/L)
0	0	6.79565	13.82187	0
.5	.5	6.69362	13.54452	0
1	1	6.614577	13.27275	0
1.5	1.5	6.55438	13.00642	0
2	2	6.509619	12.74544	0
2.5	2.5	6.477483	12.4897	0
2.8	2.8	6.463281	12.33873	0

Δ DO = .42

OK

****

THE VARIABLES FOR SECTION 2 ARE:

The k rates shown are at 20 degrees C. The model corrects them

MODEL SIMULATION FOR THE Remington DISCHARGE TO Rappahannock R.

==========

THE BACKGROUND CONDITIONS ARE:

FLOW = 7.01 MGD D.O. = 6.88 MG/L CBOD = 3.5 MG/L NBOD= 0 MG/L

OUTPUT WILL BE GENERATED EVERY .5 MILE FROM THE BEGINNING OF A SEGMENT

****

THE VARIABLES FOR SECTION 1 ARE:

The k rates shown are at 20 degrees C. The model corrects them.

Ka = 2.5 /DAY Kr = .21 /DAY Kn = 0 /DAY SATURATION D.O. = 7.64975
LENGTH = 2.8 MI VELOCITY = 8.2 MI/D TEMP. = 30 C ELEV. = 260 FT
P = 0 MG/L/D R = 0 MG/L/D BENTHIC DEMAND = 0 MG/L/D

FOR THE DISCHARGE AT THE BEGINNING OF THE SEGMENT:

FLOW = 2.5 MGD D.O. = 6.5 MG/L CBOD = 42 MG/L NBOD = 0 MG/L

BOD42 = CBOD 16.8 mg/l = 17 mg/l

THE RESULTS FOR SECTION 1 ARE

DISTANCE (MI) FROM HEAD OF SEGMENT	TOTAL DISTANCE (MI) FROM BEGINNING	D.O. (MG/L)	CBOD (MG/L)	NBOD (MG/L)
0	0	6.780106	13.62093	0
.5	.5	6.684472	13.34762	0
1	1	6.610628	13.07979	0
1.5	1.5	6.554645	12.81734	0
2	2	6.513286	12.56015	0
2.5	2.5	6.483886	12.30813	0
2.8	2.8	6.471055	12.15935	0

****

THE VARIABLES FOR SECTION 2 ARE:

The k rates shown are at 20 degrees C. The model corrects them.

Ka = 15 /DAY Kr = .21 /DAY Kn = 0 /DAY SATURATION D.O. = 7.64975 M
LENGTH = 1 MI VELOCITY = 8.2 MI/D TEMP. = 30 C ELEV. = 260 FT
P = 0 MG/L/D R = 0 MG/L/D BENTHIC DEMAND = 0 MG/L/D

FOR THE DISCHARGE AT THE BEGINNING OF THE SEGMENT:

FLOW = 0 MGD D.O. = 0 MG/L CBOD = 0 MG/L NBOD = 0 MG/L

THE RESULTS FOR SECTION 2 ARE

DISTANCE (MI) FROM HEAD OF SEGMENT	TOTAL DISTANCE (MI) FROM BEGINNING	D.O. (MG/L)	CBOD (MG/L)	NBOD (MG/L)
0	2.8	6.471055	12.15935	0
.5	3.3	7.135887	11.91537	0
1	3.8	7.347312	11.67628	0

****

SIMULATION COMPLETED

2.5 MGD

EFFLUENT = 16.8 mg/L cBOD$_5$

3.0 mg/L TKN

6.5 mg/L DO.

Note: Use 17 for cBOD

Spreadsheet for determination of WET test endpoints or WET limits

Excel 97
Revision Date: 01/10/05
File: WETLIM10.xls
(MIX.EXE required also)

Acute Endpoint/Permit Limit — Use as LC_{50} in Special Condition, as TUa on DMR

ACUTE	100% =	NOAEC	LC_{50} =	NA	% Use as	NA	TUa
ACUTE WLAa		0.3483	Note: Inform the permittee that if the mean of the data exceeds this TUa:	1.0	a limit may result using WLA EXE		

Chronic Endpoint/Permit Limit — Use as NOEC in Special Condition, as TUc on DMR

CHRONIC	3.483000085	TU_c	NOEC =	29	% Use as	3.44	TU_c
BOTH*	3.483000085	TU_c	NOEC =	29	% Use as	3.44	TU_c
AML	3.483000085	TU_c	NOEC =	29	% Use as	3.44	TU_c

ACUTE WLAa,c	3.483	Note: Inform the permittee that if the mean of the data exceeds this TUc:	1.43132032
CHRONIC WLAc	4.2	a limit may result using WLA EXE	

* Both means acute expressed as chronic

Enter data in the cells with blue type:

Entry Date:	03/22/07					
Facility Name:						
VPDES Number:	VA0076805					
Outfall Number:	1					
			% Flow to be used from MIX.EXE		Difuser /modeling study?	
Plant Flow:	2	MGD			Enter Y/N	N
Acute 1Q10:	5.6	MGD	6.75	%	Acute	1 1
Chronic 7Q10:	6.4	MGD	100	%	Chronic	1 1

Are data available to calculate CV? (Y/N)	N	(Minimum of 10 data points, same species, needed)	Go to Page 2
Are data available to calculate ACR? (Y/N)	N	(NOEC<LC50, do not use greater/less than data)	Go to Page 3

IWC_a	86.13264427	%	Plant flow/plant flow + 1Q10
IWC_c	23.80952381	%	Plant flow/plant flow + 7Q10

NOTE: If the IWCa is >33%, specify the NOAEC = 100% test/endpoint for use

Dilution, acute	1.161		100/IWCa
Dilution, chronic	4.2		100/IWCc
WLA_a	0.3483		Instream criterion (0.3 TUa) X's Dilution, acute
WLA_c	4.2		Instream criterion (1.0 TUc) X's Dilution, chronic
$WLA_{a,c}$	3.483		ACR X's WLA_a - converts acute WLA to chronic units
ACR -acute/chronic ratio	10		LC50/NOEC (Default is 10 - if data are available, use tables Page 3)
CV-Coefficient of variation	0.6		Default of 0.6 - if data are available, use tables Page 2)
Constants eA	0.4109447		Default = 0.41
eB	0.6010373		Default = 0.60
eC	2.4334175		Default = 2.43
eD	2.4334175	Default = 2.43 (1 samp)	No. of sample: 1

****The Maximum Daily Limit is calculated from the lowest LTA, X's eC. The $LTA_{a,c}$ and MDL using it are driven by the ACR.**

$LTA_{a,c}$	1.43132039	WLAa,c X's eA						Rounded NOEC's	%
LTA_c	2.52435666	WLAc X's eB						NOEC =	29 %
MDL** with $LTA_{a,c}$	3.483000085	TU_c	NOEC =	28.710881	(Protects from acute/chronic toxicity)			NOEC =	17 %
MDL** with LTA_c	6.142813673	TU_c	NOEC =	16.279185	(Protects from chronic toxicity)			NOEC =	29
AML with lowest LTA	3.483000085	TU_c	NOEC =	28.710881	Lowest LTA X's eD				

IF ONLY ACUTE ENDPOINT/LIMIT IS NEEDED, CONVERT MDL FROM TU_c to TU_a

								Rounded LC50's	%
MDL with $LTA_{a,c}$	0.348300009	TU_a	LC50 =	287.108807	%	Use NOAEC=100%		LC50 = NA	%
MDL with LTA_c	0.614281367	TU_a	LC50 =	162.791850	%	Use NOAEC=100%		LC50 = NA	

Spreadsheet for determination of WET test endpoints or WET limits

Excel 97
Revision Date: 01/10/05
File: WETLIM10.xls
(MIX.EXE required also)

Acute Endpoint/Permit Limit — Use as LC_{50} in Special Condition, as TUa on DMR

ACUTE	100% =	NOAEC	LC_{50} =	NA	% Use as	NA	TUa

ACUTE WLAa 0.3409248 — Note: Inform the permittee that if the mean of the data exceeds this TUa: 1.0 a limit may result using WLA.EXE

Chronic Endpoint/Permit Limit — Use as NOEC in Special Condition, as TUc on DMR

CHRONIC	3.409248084	TU_c	NOEC =	30	% Use as	3.33	TU_c
BOTH*	3.409248084	TU_c	NOEC =	30	% Use as	3.33	TU_c
AML	3.409248084	TU_c	NOEC =	30	% Use as	3.33	TU_c

ACUTE WLAa,c 3.409248
CHRONIC WLAc 3.56
* Both means acute expressed as chronic

Note: Inform the permittee that if the mean of the data exceeds this TUc: 1.40101233 a limit may result using WLA.EXE

Enter data in the cells with blue type:

Entry Date:	03/22/07
Facility Name:	
VPDES Number:	VA0076805
Outfall Number:	1

			% Flow to be used from MIX.EXE	Diffuser /modeling study?	
				Enter Y/N	N
Plant Flow:	2.5	MGD			
Acute 1Q10:	5.6	MGD	6.09 %	Acute	1 1
Chronic 7Q10:	6.4	MGD	100 %	Chronic	1 1

Are data available to calculate CV? (Y/N) N (Minimum of 10 data points, same species, needed) Go to Page 2
Are data available to calculate ACR? (Y/N) N (NOEC<LC50, do not use greater/less than data) Go to Page 3

IWC_a	87.99594515	%	Plant flow/plant flow + 1Q10
IWC_c	28.08988764	%	Plant flow/plant flow + 7Q10

NOTE: If the IWCa is >33%, specify the NOAEC = 100% test/endpoint for use

Dilution, acute	1.136416	100/IWCa
Dilution, chronic	3.56	100/IWCc

WLA_a	0.3409248	Instream criterion (0.3 TUa) X's Dilution, acute
WLA_c	3.56	Instream criterion (1.0 TUc) X's Dilution, chronic
$WLA_{a,c}$	3.409248	ACR X's WLA_a - converts acute WLA to chronic units

ACR -acute/chronic ratio	10		LC50/NOEC (Default is 10 - if data are available, use tables Page 3)
CV-Coefficient of variation	0.6		Default of 0.6 - if data are available, use tables Page 2)
Constants	eA	0.4109447	Default = 0.41
	eB	0.6010373	Default = 0.60
	eC	2.4334175	Default = 2.43
	eD	2.4334175	Default = 2.43 (1 samp) No. of sample 1

**The Maximum Daily Limit is calculated from the lowest LTA, X's eC. The LTAa,c and MDL using it are driven by the ACR.

$LTA_{a,c}$	1.401012397	WLAa,c X's eA								
LTA_c	2.139692788	WLAc X's eB						Rounded NOEC's		%
MDL** with $LTA_{a,c}$	3.409248084	TU_c	NOEC =	29.331981	(Protects from acute/chronic toxicity)			NOEC =	30	%
MDL** with LTA_c	5.206765875	TU_c	NOEC =	19.205780	(Protects from chronic toxicity)			NOEC =	20	%
AML with lowest LTA	3.409248084	TU_c	NOEC =	29.331981	Lowest LTA X's eD			NOEC =	30	

IF ONLY ACUTE ENDPOINT/LIMIT IS NEEDED, CONVERT MDL FROM TU_c to TU_a

								Rounded LC50's		%
MDL with $LTA_{a,c}$	0.340924808	TU_a	LC50 =	293.319810	%	Use NOAEC=100%		LC50 =	NA	%
MDL with LTA_c	0.520676587	TU_a	LC50 =	192.057800	%	Use NOAEC=100%		LC50 =	NA	

Mixing Zone Predictions for Remington WWTP

Effluent Flow = 2.5 MGD
Stream 7Q10 = 6.4 MGD
Stream 30Q10 = 89 MGD
Stream 1Q10 = 5.6 MGD
Stream slope = .001 ft/ft
Stream width = 75 ft
Bottom scale = 1
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .3764 ft
Length = 26496.88 ft
Velocity = .488 ft/sec
Residence Time = .6284 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = 1.5422 ft
Length = 8017.13 ft
Velocity = 1.2246 ft/sec
Residence Time = .0758 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .3556 ft
Length = 27790.16 ft
Velocity = .4701 ft/sec
Residence Time = 16.4218 hours

Recommendation:

A complete mix assumption is appropriate for this situation providing no more than 6.09% of the 1Q10 is used.

Mixing Zone Predictions for Remington WWTP

Effluent Flow = 2.0 MGD
Stream 7Q10 = 6.4 MGD
Stream 30Q10 = 89 MGD
Stream 1Q10 = 5.6 MGD
Stream slope = .001 ft/ft
Stream width = 75 ft
Bottom scale = 1
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .3635 ft
Length = 27284.27 ft
Velocity = .4769 ft/sec
Residence Time = .6621 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = 1.5369 ft
Length = 8041.23 ft
Velocity = 1.2219 ft/sec
Residence Time = .0762 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .3423 ft
Length = 28699.95 ft
Velocity = .4583 ft/sec
Residence Time = 17.3948 hours

Recommendation:

A complete mix assumption is appropriate for this situation providing no more than 5.75% of the 1Q10 is used.

Citizens may comment on the proposed reissuance of a permit that allows the release of treated wastewater into a water body in Fauquier County, Virginia

PUBLIC COMMENT PERIOD: January 17, 2008 to 5:00 p.m. on February 15, 2008

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater
Owners or operators of municipal facilities that discharge or propose to discharge wastewater into the streams, rivers or bays of Virginia from a point source must apply for this permit. In general, point sources are fixed sources of pollution such as pipes, ditches or channels. The applicant must submit the application to the Department of Environmental Quality, under the authority of the State Water Control Board.

PURPOSE OF NOTICE: To invite the public to comment on the draft permit.

NAME, ADDRESS AND PERMIT NUMBER OF APPLICANT: Fauquier County Water and Sanitation Authority
7172 Kennedy Road, Warrenton, VA 20187
VA0076805

NAME AND ADDRESS OF FACILITY: Remington WWTP
12523 Lucky Hill Road, Remington, VA 22734

Project description: Fauquier County Water and Sanitation Authority has applied for a reissuance of a permit for Remington WWTP in Fauquier County, Virginia. The applicant proposes to release treated sewage at a rate of 2.0 Million Gallons per Day into the Rappahannock River in Fauquier County that is in the Rappahannock River watershed with potential for future expansion to 2.5 MGD. A watershed is the land area drained by a river and its incoming streams. The sludge will be disposed of by land application by a contractor. The permit will limit the following pollutants to amounts that protect water quality: pH, $CBOD_5$, Total Suspended Solids, Dissolved Oxygen, Total Kjeldahl Nitrogen, Total Recoverable Zinc. *E. coli* and Chronic Toxicity. This facility is subject to the requirements of 9 VAC 25-820 and has registered for coverage under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

HOW A DECISION IS MADE: After public comments have been considered and addressed by the permit or other means, DEQ will make the final decision unless there is a public hearing. DEQ may hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the proposed permit. If there is a public hearing, the State Water Control Board will make the final decision.

HOW TO COMMENT: DEQ accepts comments by e-mail, fax or postal mail. All comments must be in writing and be received by DEQ during the comment period. The public also may request a public hearing.

WRITTEN COMMENTS MUST INCLUDE:
1. The names, mailing addresses and telephone numbers of the person commenting and of all people represented by the citizen.
2. If a public hearing is requested, the reason for holding a hearing, including associated concerns.
3. A brief, informal statement regarding the extent of the interest of the person commenting, including how the operation of the facility or activity affects the citizen.

TO REVIEW THE DRAFT PERMIT AND APPLICATION: The public may review the documents at the DEQ-Northern Virginia Regional Office every work day by appointment.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION:
Name: Susan Mackert
Address: DEQ-Northern Virginia Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3853 E-mail: sdmackert@deq.virginia.gov Fax: (703) 583-3841

Revised 2/2003

State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Remington WWTP
NPDES Permit Number:	VA0076805
Permit Writer Name:	Susan Mackert
Date:	April 10, 2007

Major [**X**] **Minor** [ ] **Industrial** [ ] **Municipal** [**X**]

I.A. Draft Permit Package Submittal Includes:	**Yes**	**No**	**N/A**
1. Permit Application?	**X**		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	**X**		
3. Copy of Public Notice?	**X**		
4. Complete Fact Sheet?	**X**		
5. A Priority Pollutant Screening to determine parameters of concern?	**X**		
6. A Reasonable Potential analysis showing calculated WQBELs?	**X**		
7. Dissolved Oxygen calculations?	**X**		
8. Whole Effluent Toxicity Test summary and analysis?	**X**		
9. Permit Rating Sheet for new or modified industrial facilities?			**X**

I.B. Permit/Facility Characteristics	**Yes**	**No**	**N/A**
1. Is this a new, or currently unpermitted facility?		**X**	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	**X**		
3. Does the fact sheet **or** permit contain a description of the wastewater treatment process?	**X**		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		**X**	
5. Has there been any change in streamflow characteristics since the last permit was developed?		**X**	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		**X**	
7. Does the fact sheet **or** permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	**X**		
8. Does the facility discharge to a 303(d) listed water?		**X**	
a. Has a TMDL been developed and approved by EPA for the impaired water?			**X**
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			**X**
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?			**X**
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		**X**	
10. Does the permit authorize discharges of storm water?		**X**	

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?		X	
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (POTWs)	Yes	No	N/A
1. Does the permit contain numeric limits for ALL of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?			X

3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	X		
d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	X		
e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	X		
II.D. Water Quality-Based Effluent Limits – cont.	**Yes**	**No**	**N/A**
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	**Yes**	**No**	**N/A**
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?	X		

II.F. Special Conditions	**Yes**	**No**	**N/A**
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?			X

II.F. Special Conditions – cont.	**Yes**	**No**	**N/A**
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?			X
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the "Nine Minimum Controls"?		X	
b. Does the permit require development and implementation of a "Long Term Control Plan"?		X	
c. Does the permit require monitoring and reporting for CSO events?		X	
7. Does the permit include appropriate Pretreatment Program requirements?	X		

II.G. Standard Conditions	**Yes**	**No**	**N/A**
1. Does the **permit** contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		

List of Standard Conditions – 40 CFR 122.41		
Duty to comply	Property rights	Reporting Requirements
Duty to reapply	Duty to provide information	Planned change
Need to halt or reduce activity not a defense	Inspections and entry	Anticipated noncompliance
	Monitoring and records	Transfers
Duty to mitigate	Signatory requirement	Monitoring reports
Proper O & M	Bypass	Compliance schedules
Permit actions	Upset	24-Hour reporting
		Other non-compliance

2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	**X**		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	Susan Mackert
Title	Environmental Specialist II
Signature	
Date	April 10, 2007